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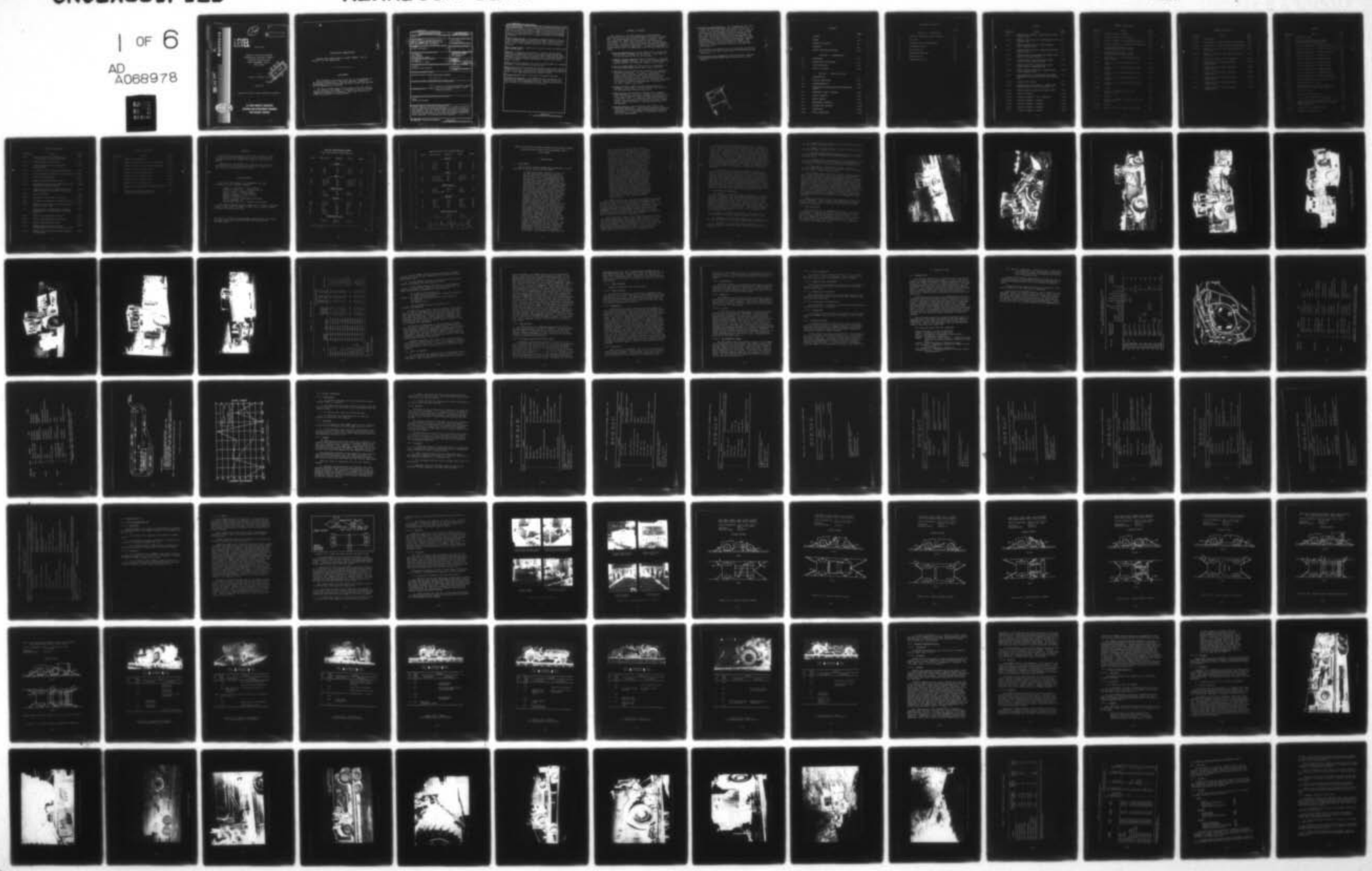

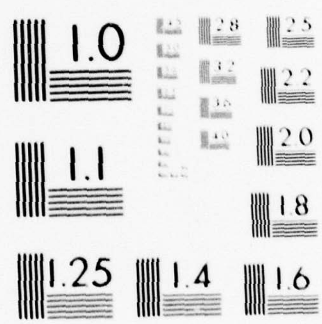

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LEVEL II

Report 2269

FAMILY OF MILITARY ENGINEER CONSTRUCTION EQUIPMENT (FAMECE) PROTOTYPE QUALIFICATION TEST-GOVERNMENT (PQT-G) TEST REPORT

by

Arthur B. Follansbee, et al.

March 1979

Approved for public release; distribution unlimited.

U.S. ARMY MOBILITY EQUIPMENT RESEARCH AND DEVELOPMENT COMMAND
FORT BELVOIR, VIRGINIA

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19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

FAMECE
Construction Equipment

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

The PQT-G generally confirmed that FAMECE meets or is capable of meeting most criteria established in the MN (Materiel Need), the detailed test plans, or other standards. With few exceptions, FAMECE was subjected to the testing as prescribed by the test plan. In other cases, testing and the corresponding results were adversely affected by such variables as weather conditions and operator experience. The following tests were conducted:

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Rail transportability. Each of the eight types of FAMECE work sections in combination with a power section was rail-impact tested. Inspection and further vehicle testing revealed no failure or damage attributable to the rail test. The criterion that states FAMECE be designed to withstand the shock and vibration of a rail impact (hump) was met. The criterion specifying that minimal disassembly was essential in order to prepare the vehicles for rail shipment was also met.

Highway transportability. Actual movement by highway between test sites, in lieu of testing, revealed no resulting vehicle damage. However, the overall vehicle shipping widths exceeded the allowable limits in 49 states; the criterion is met but the overwidth condition restricts travel with respect to state law.

Marine transportability. Observations and results of other tests indicate that the criterion is met.

Endurance. Testing results were generally in compliance with MN criteria. Fuel and oil consumption was normal; some infrequent coupling problems were experienced because of dirt in the mechanism; some incidents and minor vehicle damage were recorded resulting from operator errors. In addition, visibility and light illumination presented some problems to operators of the dozer, dumper, and grader.

Safety. With certain exceptions, the criterion requiring FAMECE to be designed according to safety engineering principles was met.

Human factors observations revealed minor problems with some control locations, display, or visibility. Noise levels exceeded those allowable levels specified in MIL-STD-1474A, thus requiring the use of hearing protection by on-board personnel. Overall FAMECE design generally conforms to criteria.

Maintainability and characteristics were found to be generally acceptable.

Reliability and durability. At the MERADCOM Test Area, approximately 6,000 test hours were logged; 139 mission failures were reported. For the total vehicles tested, the resulting MTBF was 43 hours. The resulting 10-hour mission reliability for the total vehicles tested was 0.79.

SUMMARY OF RESULTS

The results of the PQT-G generally confirmed that FAMECE meets most criteria established in the Materiel Need (MN), the detailed test plans, or other standards. With few exceptions, FAMECE was subjected to the testing as prescribed. In other cases, testing and the corresponding results were adversely affected by such variables as weather conditions and operator experience. It was also necessary to suspend PQT-G prior to completion of the total scheduled test hours.

- Rail transportability testing resulted in a minor weld failure with no damage to the vehicle. Each vehicle started afterwards and was driven away.

- Highway transportability testing revealed no resulting vehicle damage. However, the overall vehicle shipping widths exceeded the allowable limits in 49 states.

- Marine transportability testing was not conducted in the prescribed manner since PQT-G was terminated.

- Endurance testing results were generally in compliance with MN requirements. Fuel and oil consumption was normal; some infrequent coupling problems were experienced because of dirt in the mechanism; some incidents and minor vehicle damage were recorded resulting from operator errors. In addition, visibility or lighting presented some problems to operators of the dozer, dumper, and grader.

- Safety analysis, based on test observations and equipment performance, revealed certain deficiencies and shortcomings requiring correction

- Human factors observations revealed minor problems with some control locations, display, or visibility. Noise levels exceeded those allowable levels specified in MIL-STD-1474A. In addition, some difficulties or hazards were encountered by operators during ingress/egress, normal operations, coupling/uncoupling, and maintenance.

- Maintainability characteristics were found to be generally acceptable. Some design characteristics and components adversely affected maintenance and supply requirements. A requirement for additional special tools was established.

- Reliability and durability. At the MERADCOM Test Area, a total of 6,006 test hours were logged during the August 1977 to March 1978 test period. 139.25 mission failures with the mission criticality factor applied were reported by the FAMECE scoring conference. For the total of vehicles tested, the resulting MTBF was 43 hours. The criteria stated that the MTBF would be comparable to existing military construction equipment. This parameter is to be determined by TRADOC. The resulting 10-hour mission reliability, considering mission criticality factors, for the total vehicles tested was .79.

  The durability parameters are not presented; durability failures have not been identified by the FAMECE scoring conference.

- Initial and final inspection revealed several required maintenance actions which were deferred until after testing.

CONTENTS

CONTENTS (Continued)

FIGURES

FIGURES (Continued)

FIGURES (Continued)

TABLES

TABLES (Continued)

TABLES (Continued)

FOREWORD

This test was sponsored by the Project Manager, Family of Military Engineer Construction Equipment and Universal Engineer Tractor (PM, FAMECE/UET) under the direction of DARCOM.

MERADCOM was responsible for preparing the test plan, conducting the test, and preparing the test report with the guidance and monitorship of TECOM.

ACKNOWLEDGMENTS

The report was prepared by a MERADCOM test team consisting of the following members:

Arthur B. Follansbee - Test Director
Richard T. Eiler, Jr. - Transportability
Carl W. Hasle - Endurance Test
Ronald J. Larch - Safety Analysis
Anthony Antenucci - Human Factors
Thomas E. Smith and
Jacques G. Paluy - Maintenance Analysis
Otto L. Matherny and
Christopher Irby, Jr. - Reliability Analysis

The authors express special thanks to Mr. James H. Hartwell, TECOM, and Mr. Paul R. Cushatt of MTD, APG, for their expert guidance throughout this test.

Ed. note: In order to meet customer requirements, the format of this report varies slightly from that of the usual MERADCOM report.

METRIC CONVERSION FACTORS

Approximate Conversions to Metric Measures

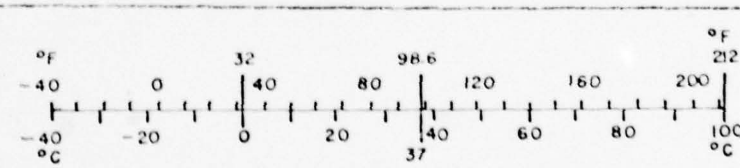
Symbol	When You Know	Multiply by	To Find	Symbol
		LENGTH		
in	inches	*2.5	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
		AREA		
in^2	square inches	6.5	square centimeters	cm^2
ft^2	square feet	0.09	square meters	m^2
yd^2	square yards	0.8	square meters	m^2
mi^2	square miles	2.6	square kilometers	km^2
	acres	0.4	hectares	ha
		MASS (weight)		
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons (2000 lb)	0.9	metric tons	t
		VOLUME		
tsp	teaspoons	5	milliliters	ml
Tbsp	tablespoons	15	milliliters	ml
fl oz	fluid ounces	30	milliliters	ml
c	cups	0.24	liters	L
pt	pints	0.47	liters	L
qt	quarts	0.95	liters	L
gal	gallons	3.8	liters	L
ft^3	cubic feet	0.03	cubic meters	m^3
yd^3	cubic yards	0.76	cubic meters	m^3
		TEMPERATURE (exact)		
°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

*1 in = 2.54 cm (exactly).

inches 1 2 3 4 5 6 7 8 9

Approximate Conversions from Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
		LENGTH		
mm	millimeters	0.04	inches	in
cm	centimeters	0.4	inches	in
m	meters	3.3	feet	ft
m	meters	1.1	yards	yd
km	kilometers	0.6	miles	mi
		AREA		
cm^2	square centimeters	0.16	square inches	in^2
m^2	square meters	1.2	square yards	yd^2
km^2	square kilometers	0.4	square miles	mi^2
ha	hectares (10 000 m^2)	2.5	acres	
		MASS (weight)		
g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	metric tons (1000 kg)	1.1	short tons	
		VOLUME		
ml	milliliters	0.03	fluid ounces	fl oz
L	liters	2.1	pints	pt
L	liters	1.06	quarts	qt
L	liters	0.26	gallons	gal
m^3	cubic meters	35	cubic feet	ft^3
m^3	cubic meters	1.3	cubic yards	yd^3
		TEMPERATURE (exact)		
°C	Celsius temperature	9/5 (then add 32)	Fahrenheit temperature	°F



FAMILY OF MILITARY ENGINEER CONSTRUCTION EQUIPMENT (FAMECE)
PROTOTYPE QUALIFICATION TEST-GOVERNMENT (PQT-G)
TEST REPORT

1. INTRODUCTION

1.1 BACKGROUND

The following general background information is from paragraph 6 of the revised MN (ED) (QMR).

> US Army operational concepts for the 1975 to 1985 time period envision strategic forces which are quickly deployed to any part of the world. Although general war is possible, it is more probable that the US Army must conduct land operations in undeveloped areas, areas which will emphasize the need for major and expedited base construction. Further, it is envisioned that within the area of operations, the US Army tactical operations will be typified by highly mobile ground forces utilizing an increased number of aircraft for transporting troops, equipment, and logistical supplies. These concepts will require engineer units to move and construct air landing facilities, ports, bases, and routes of communication in support of ground operations more rapidly than in the past. In addition, the increased use of air lines of communication will generate a corresponding increase for the rapid construction of air landing facilities and associated supply handling and storage complexes. Reference is made to letter FOR DS SSS, Assistant Chief of Staff for Force Development, Department of the Army, 9 July 1965, wherein the policy was established for the reduction in size and weight of equipment for the US Army. The majority of existing military earthmoving construction equipment is too heavy and cumbersome to be air dropped, lifted by helicopters, or even air transported in some cases. Road speeds are generally far

below convoy speed while many items of equipment must be transported on trailers. Few provide for rapid changing of the construction task capability. Consequently, a family of construction equipment must be developed that is lighter in weight with a high work capacity, capable of being parachute delivered and airlifted by helicopters, utilizes a standard power section, provides construction flexibility, and is capable of satisfying the construction equipment requirements of airborne, airmobile, and the many conventional divisional and nondivisional combat engineer units. The development of this family of engineer construction equipment utilizing high-density standard power section components and proven construction work section components is both economical and practical and will overcome, to a large degree, the severe logistical burden of supplying repair parts to a multitude of makes and models or existing military construction equipment. Further, use of a standard power section will significantly reduce maintenance and operator training requirements and make engineer equipment more compatible with Army maintenance capabilities.

The FAMECE program was initiated and successfully passed through its Conceptual Phase and into the Demonstration and Validation Phase. A joint Development Test (DT) I and Operational Test (OT) I on two competing contractor versions of the scraper and grader vehicles was conducted by APG, USAARENBD, TRADOC, and USACEBD personnel at APG from 30 November 1973 to 20 August 1974. The results of the APG Engineering Phase of the program are documented in Appendix XVII of Report APG-MT-4528, September 1974.

Clark Equipment Company (CEC) emerged from the Validation Phase competition as the successful contractor for the Full-Scale Development (FSD) Phase. Two early prototypes (loader and dumper) were manufactured and specific performance and endurance testing conducted as part of Research and Development Acceptance Testing (RDAT). The loader and dumper were then transferred to Yuma Proving Grounds for environmental and air-drop testing in September 1977.

In accordance with current SIDTC policy, Engineer Design Tests of the FSD FAMECE vehicles were conducted by CEC at their Benton Harbor, Michigan, facilities from September 1976 to November 1977. During these tests, the required DT II (EDT) performance and productivity data were generated. DARCOM on 10 October 1976, directed MERADCOM to conduct DT II PQT-G at Fort Belvoir, Virginia. In a subsequent letter, 29 July 1977, DARCOM stated that TECOM would be responsible for the conduct of the tests and that the tests would be accomplished in the same manner as testing at one of the TECOM subordinate installations. TECOM, in letter DRSTE-AR dated 1 March 1977, further directed APG to monitor and assess the adequacy of the tests conducted by MERADCOM.

In addition to two early-on prototypes (dumper and loader work sections and power sections), CEC has manufactured 13 power sections and 14 work sections for testing, conducted RDAT at their facility, and reported the test results to the Project Manager's Office (PMO). Beginning in July 1977, the FAMECE test vehicles were transferred to MERADCOM for PQT. After the PQT was suspended on 17 March 1978, the test items were inspected and repaired to serviceable condition for OT at Fort Bragg, North Carolina. As a result of PQT and earlier testing, the contractor provided a number of modifications, which were made prior to OT.

1.2 DESCRIPTION OF MATERIEL

The FAMECE is a sectionalized, articulated- or hinge-steering, pneumatic-tire, earthmoving system to be used by airborne, airmobile, and other combat engineer units to accomplish construction tasks under varying climatic conditions from arctic to tropic, over typical terrain, in all theaters of operation, and during daylight or at night. The system consists of one standard power section and several types of construction work sections. Each vehicle consists of a standard power section and one of the following construction work sections:

a. Dozer of 20,000-pound-drawbar-pull capacity with semi-U blade and back-rip scarifier teeth (Figure 1.2-1).

b. Loader of 20,000-pound-drawbar-pull capacity with multisegment bucket of 2-1/2-cubic-yard capacity (Figure 1.2-2).

c. Scraper of 10-cubic-yard struck capacity, self-loading, but also capable of being push-loaded by the dozer (Figure 1.2-3).

d. Grader with side-shifting, 13-foot blade and removable scarifier (Figure 1.2-4).

e. Dumper of 10-ton capacity capable of hauling troops and general cargo (Figure 1.2-5).

f. Pneumatic-Tire Tamping-Foot Compactor (T.F. Compactor) capable of compacting at a minimum speed of 7.5 mi/h (Figure 1.2-6).

g. Pneumatic-Tire Smooth-Drum Vibratory Compactor (S.D. Compactor) capable of exerting compaction pressures up to 150 pounds per linear inch of roller width (Figure 1.2-7).

h. Distributor, 2500-gallon capacity, capable of spraying water 35 feet from the spray head and in a pattern up to 70 feet in width (Figure 1.2-8).

The standard power section is compatible with and adaptable to the construction work sections for construction tasks such as loading, excavating, grubbing, dozing, scraping, hauling, grading, dumping, spreading, and soil compaction. Each power section and construction work section is capable of being airlifted as a separate load by CH-47 Army medium-lift helicopters of the 1975 time frame. A complete vehicle is capable of being transported as an internal load and air dropped from US Air Force aircraft (C-130, C-141, and C-5A). Each standard power section and construction work section is provided with lifting and tiedown devices to permit worldwide movement by highway, rail, ocean, amphibious, and inland-waterway carriers with no (or a minimum of) disassembly.

Table 1.2-1 shows the test items received and hours of test at MERADCOM. Once coupled, each combination of power section and work section remained as one vehicle for the duration of the test.

1.3 TEST OBJECTIVES

The objectives of the MERADCOM tests were: to measure the degree of compliance with the criteria detailed in the revised MN, to measure and analyze the performance of the FSD test items, and to address the critical issues stated by DA in the FAMECE Program memorandum which were included in the AMSAA test design plan. The following were identified as critical test areas for DT II:

Figure 1.2-1. FAMECE dozer vehicle,
three-quarter front, roadside view.

Figure 1.2-2. FAMECE loader vehicle, three-quarter front, curbside view.

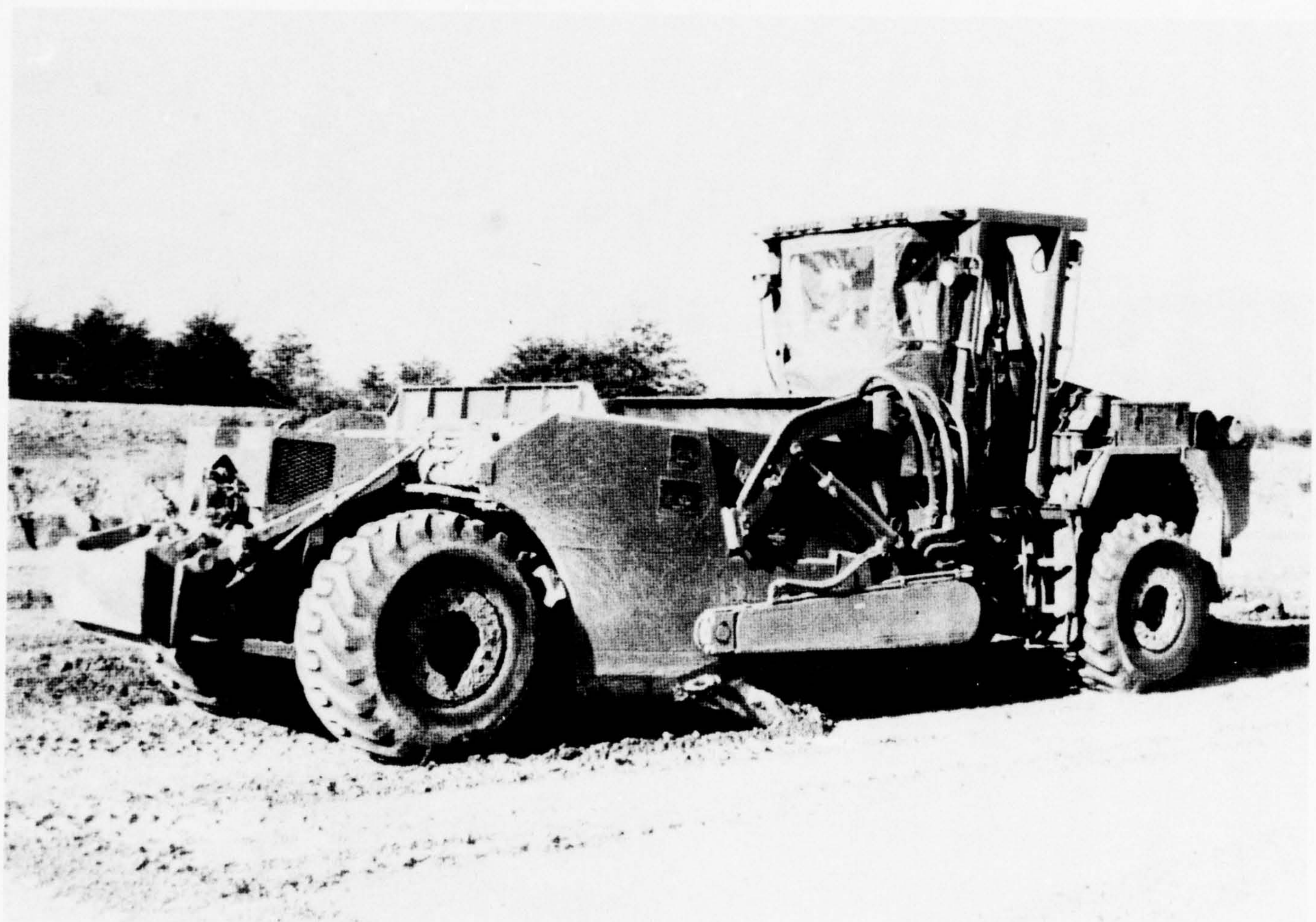


Figure 1.2-3. FAMECE scraper vehicle, three-quarter rear, curbside view.

Figure 1.2-4. FAMECE grader vehicle, three-quarter rear, curbside view.

Figure 1.2-5. FAMECE vehicle uncoupled into dumper work section and power section.

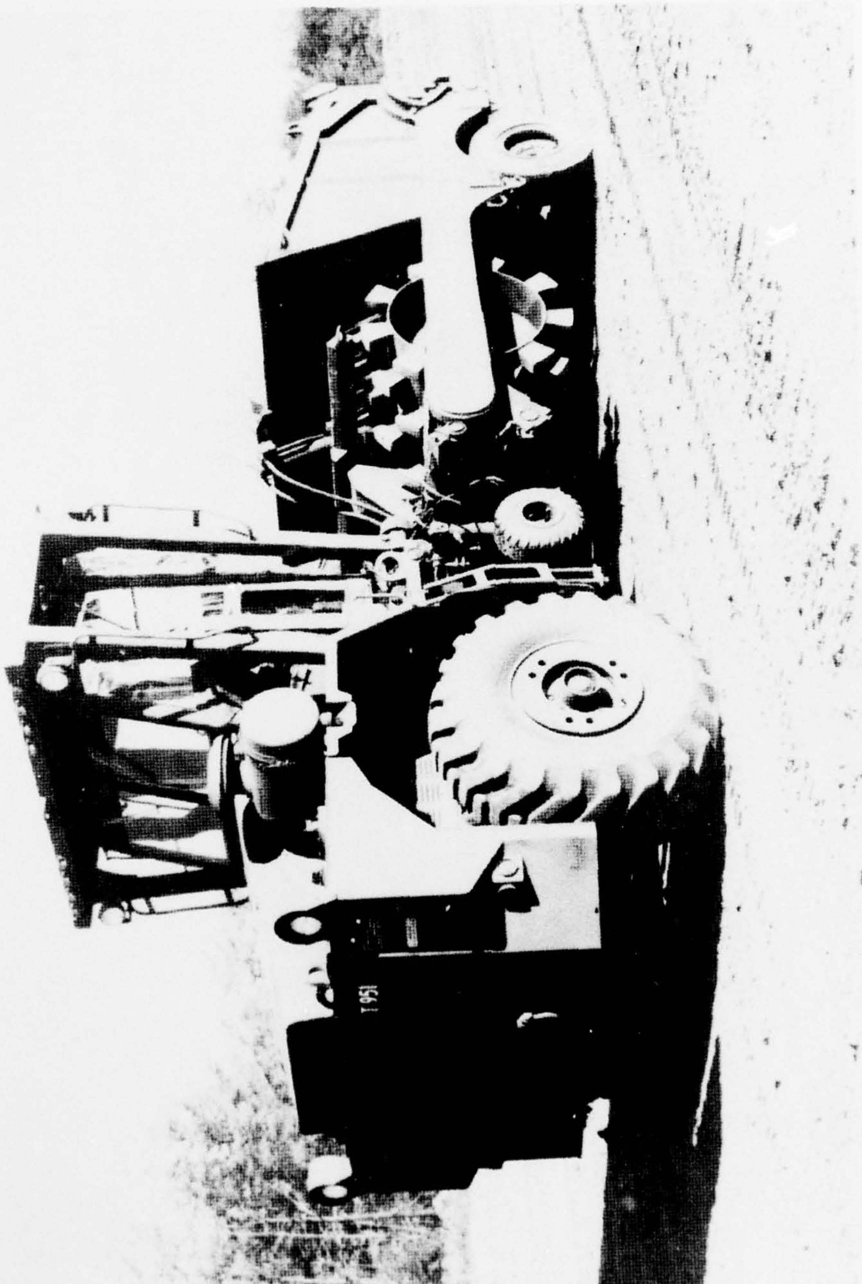


Figure 1.2-6. FAMECE tamping-foot compactor, three-quarter front, roadside view.

Figure 1.2-7. FAMECE smooth-drum compactor, three-quarter front, roadside view.

Figure 1.2-8. FAMECE water distributor, three-quarter rear, curbside view.

Table 1.2-1. FAMECE Test Data

Unit	MERADCOM Number		Serial Number		Hours When Received (Reported by CEC)		Test Hours Completed			Date Received
	PS	WS	PS	WS	PS	WS	Work Section (At MERADCOM)	Power Section (Hour Meter)	Total Work Section Hours	
Dumper (I)	T935	T936	446X108	467X102	19.0	14.1	1047	1072	1061	21 Jul 77
Dumper (II)	T959	T960	446X113	467X104	25.4	20.4	374	400	395	30 Nov 77
Dumper (III)	None	T942	None	467X103	None	17.2	200	1286	231	2 Sep 77
Loader	T937	T966	446X105	465X102	152.0	13.3	936	1096	949	26 Aug 77
Grader (I)	T939	T940	446X104	471X101	272.0	119.5	776	1054	895	15 Aug 77
Grader (II)	T949	T950	446X116	471X102	429.0	429.0	110	539	542	9 Feb 78
Dozer (I)	T943	T944	446X107	446X107	78.1	140.5	743	832	884	15 Sep 77
Dozer (II) *	T945	T946	446X109	466X102						Not received
Scraper (I)	T955	T956	446X114	464X102	28.0	19.5	233	251	242	18 Nov 77
Scraper (II) *	T947	T948	446X111	464X101						
Distributor (I)	T941	T938	446X106	468X101	66.3	120.7	830	896	951	2 Sep 77
Distributor (II)	T957	T958	446X115	468X102	10.3	9.8	237	247	247	22 Nov 77
TF Compactor	T951	T952	446X110	469X101	108.9	86.9	293	402	330	8 Nov 77
SD Compactor	T953	T954	446X112	470X101	62.0	64.1	273	335	337.6	16 Nov 77

PS - Power Section
WS - Work Section

* Not tested at MERADCOM.

a. Do the FAMECE vehicles possess satisfactory RAM-D characteristics or do they demonstrate satisfactory progress toward that goal?

b. Can the FAMECE vehicles be satisfactorily air-transported, air-dropped, and helicopter-lifted?

c. Do the FAMECE vehicle systems (i.e., the complete family of vehicles, the operators, and the maintainers) exhibit satisfactory performance in areas such as:

(1) Coupling and uncoupling?
(2) Production rates (the rate at which the vehicle works, i.e., cubic yards per hour)?
(3) Mobility (hard-surface and cross-country)?
(4) Safety?
(5) Human factors?

d. Can the FAMECE perform satisfactorily in adverse environments?

In addition to the above critical issues, it was essential to make an assessment of the training plan for operators and maintenance personnel for DT II, since this plan will form the basis for training additional personnel (key personnel and operators). Data collected, comments, and proposed corrective action on readability of manuals and instructions were evaluated, and the need for special training equipment was determined.

Similarly, an assessment of the maintenance-support plan was made to determine its adequacy and compatibility with existing concepts of maintenance support. Specifically, data generated concerning scheduled and unscheduled maintenance during DT (e.g., breakdowns, times to repair, parts consumption, and adequacy of tools and test measurement and diagnostic equipment) were evaluated with regard to warranty requirements and other limitations.

MERADCOM recognizes that all of the critical issues could not be addressed fully in DT II, but the results should prove important to the IER. In addition, MERADCOM, following SIDTC policy, did not duplicate prior valid contractor testing.

1.4 SCOPE OF TESTING

DT II provided data required for an independent evaluation of the state of the FAMECE program at the end of the FSD Phase. This evaluation will assist the Army planners in

deciding whether the FAMECE should enter the production phase. With time and cost effectiveness in mind, it was determined that the two phases of the FAMECE DT II (i.e., EDT and PQT) would be conducted separately. The EDT, or RDAT, was performed by CEC, the developer contractor; the PQT related to the RAM-D was performed by MERADCOM. Some of the air-drop tests were conducted concurrently with PQT at Yuma Proving Grounds and NARADCOM. (The remaining air-transportability tests will be conducted by the Army Aviation Communication Electronics Board (ACE) at the completion of OT.) PQT at MERADCOM was performed according to the approved test plan with changes during the test coordinated with the FAMECE TIWG and recorded. The actual amount of testing at MERADCOM is shown in Table 1.2-1. Concurrent with the PQT-G, CEC conducted approximately 1200 hours of PQT-C at their Benton Harbor, Michigan, test site involving the dozer, scraper, and grader vehicles (summarized in paragraph 2.4). The contractor's test plan was extracted from the approved DTP with TECOM, AMSAA, and PM FAMECE representatives onsite monitoring all testing. Incidents were reported using the CEC FAMECE Failure Report (FFR) format which includes the same information as the DARCOM EPR. Maintenance actions and times were recorded in the MERADCOM MTL format and were added to the automated data base. Contractor input is distinguished from MERADCOM input by a notation or reference to FFR in the printout "remarks" column. A contractor test report addresses results of the PQT-C for the three test items.

1.4.1 Test Sponsor

At DARCOM direction, MERADCOM performed the PQT in a customer relationship with the PM, FAMECE. As the customer, the PM, FAMECE provided the test items, program funding, spares, manuals, and special tools. The PM acted as the interface between MERADCOM and the contractor for required technical information and support.

1.4.2 Prototype Qualification Test (PQT)

MERADCOM prepared the PQT portion of the DT II test plan, conducted the planned testing, collected and processed data, and wrote the test report. As directed by DARCOM, a close working relationship was maintained with HQ TECOM throughout the test program. TECOM also provided an onsite monitor for the duration of the test. As an endurance test, the tests were conducted in 100-hour cycles. Testing within the cycle was done according to the task percentages specified in the MN mission profiles and according to Appendices III to X of the detailed test plans. Although the test was

suspended before the total planned hours accumulated for some FAMECE vehicles, the cycles allowed for some testing in each functional mode. Actual test hours are recorded in Table 1.2-1. Additional PQT-G (testing) on some work sections, after OT, may be necessary to satisfy all original test plan requirements.

1.4.2.1 Test Schedule

Appendix E contains the test schedule.

1.4.2.2 Test Location

The PQT was conducted at Fort Belvoir, Virginia; the majority of the test was performed at the MERADCOM Test Area (see Figure 2.1-1, map). Suitable post projects within Fort Belvoir were undertaken when the project provided the type of task called out in the mission profile of this test plan and allowed adequate test control.

1.4.3 Inspection

A receiving and initial inspection was performed on each test item and the material contained in the MTSP including manuals and spares. The receiving inspection was performed for the purpose of determining the test item's condition as a result of transportation from the contractor's plant. The initial inspection included the inventory of items shipped and a visual inspection for damage according to the applicable technical manuals. Incidents were noted, then adjusted or corrected as required. Fluid levels were checked; further servicing was not done unless service was scheduled according to the lubrication order and applicable technical manuals. Samples of lubricants and fluids were removed from the test items. The test item was started and all controls were operated briefly as a functional inspection. At the time the test was suspended, a final inspection was also performed. Repairs were made as required to restore test items to serviceable condition or were deferred to the next scheduled maintenance service. Inspections were performed according to the inspection checklists and the applicable technical manuals. Repairs were reported by EPR and MTL.

1.4.4 Break-in

When received at MERADCOM, the test items had accumulated varying amounts of hours (Table 1.2-1) as a result of the contractor's RDAT. Low-time test items (less than 20 hours on hourmeter) were operated and adjustments made

according to the technical manual for the duration of the break-in period. Operational time accumulated through prior contractor testing was chargeable against the initial 20 hours.

1.4.5 Reliability

MTBF and reliability estimates are developed from the collected data base which was formally processed through the scoring conference process. The failure scoring criteria and detail of the mission failure definitiion appear as Appendix XV of the PQT-G Detail Test Plan.

1.4.6 Subtests

The subtests were designed to test individual vehicle characteristics against the test objectives. Many subtests were similar in nature; however, some of the subtests were unique to a particular vehicle, as detailed in the appropriate section of the test report.

1.4.6.1 Safety

A test item safety statement based on contractor testing was provided by the PM to MERADCOM. Vehicle manuals were checked to determine if the safety precautions and guidance were adequate. Normal safety precautions were taken and Command safety policy was followed during testing. Safety-related problems involving the test items were reported in detail by EPR. The results of contractor noise level tests were reviewed; since noise levels exceeded acceptable limits, personnel were provided with ear protection. Testing was conducted regardless of weather conditions unless equipment and personnel safety were involved. MERADCOM Safety Office furnished TECOM with recommendations for an OT safety release prior to the start of OT. The recommendations supplemented the contractor's safety statement with analysis of the PQT-G data.

1.4.6.2 Environmental Impact

As anticipated, the environmental impact of the FAMECE test program was not significant. The FAMECE vehicles had no more impact on the environment than any other standard military construction vehicles. Noise-pollution levels beyond the operator's station were not significant. Exhaust smoke densities were not visible. Test sites remained virtually unchanged because there was no necessity to uproot trees. All soil removed throughout the test was replaced and the terrain was restored.

1.4.6.3 Fuel Consumption

The amount of fuel consumed and the rate of fuel use were recorded for each power section. This information is provided in paragraph 2.5, ENDURANCE (PQT-G) TESTING.

1.4.6.4 Human Factors Evaluation

Each vehicle was examined to determine the availability of the operator to gain access and egress and to perform vehicle operations.

1.4.6.5 Maintenance Evaluation

Maintainability indexes were calculated, special tools and TMDE requirements were investigated, and equipment publications were evaluated.

1.4.6.6 Reliability and Durability

Point estimates of mission and system mean-time-between-failures (MTBF) were calculated.

1.4.6.7 Inspection

At the time of test suspension, inspection was performed on each FAMECE section prior to shipment to the OT test site.

1.4.7 Training Program

A training program was developed to familiarize MOS-qualified Military and DA civilian personnel in the unique operating characteristics of FAMECE vehicles, maintenance functions of operators and crews, and higher maintenance operations peculiar to FAMECE systems.

A 9-day course covering organizational, direct-support, and general-support maintenance was held at the contractor's facility in July 1977. A 5-day operator course was also held there during the same month. Additional training was conducted by MERADCOM at Fort Belvoir by New Equipment Training (NET) personnel. Instruction was in accordance with the Summary of Instructions contained in the Test Plan.

2. DETAILS OF TEST

2.1 INTRODUCTION

The PQT was essentially an endurance test with the objective to obtain the maximum number of vehicle test hours within the FAMECE development schedule commensurate with the recovery of valid test data for RAM-D evaluation. The test was suspended before the total planned test hours were accumulated. The endurance tests were conducted in 100-hour cycles. Testing within each cycle was done according to the task percentages specified in the MN mission profiles. Table 2.1-1 compares mission profiles and actual course negotiations.

Each vehicle was tested at the MERADCOM Annex on soil composed of sand-clay and gravel-clay. Figures 2.1-1 and 2.1-2 give the location and physical characteristics of the test course. Ordinarily, with moisture levels in an acceptable range, measurement of production rates is not a problem. The charted mean temperatures and rainfall during PQT-G, shown in Figure 2.1-3, support the fact that soil conditions were not ideal. High moisture content created loss of bearing strength, slope instability, and loss of shear in warm weather and poor traction (frozen surfaces) in freezing weather.

The following productivity tests requested by the U.S. Army Engineer School were not completed for the FAMECE at MERADCOM during the PQT-G because of the weather and soil conditions. Tests involving slopes were not attempted because of unstable soil conditions.

The following tests were not completed:

Production Tests - Units of work/time.
Loader - Stockpiling and earthmoving.
Dozer - Earthmoving; stockpiling; push-loading.
Scraper - Earthmoving; handling.
Dumper - Earthmoving; human factors. Subjective evaluation was not done because of scheduling problems.
Grader - Road maintenance; high-bank sloping.
S.D. Compactor - Embankment compaction; asphalt transportability.
T.F. Compactor - Embankment compaction.
Transportability - Cross-country on a trailer; marine transportability.

S.D. and T.F. Compactors - Pneumatic mode of compaction was tested on frozen or partially thawed soil. Soil conditions were not adequate for testing in the vibratory mode.

Because PQT-G testing was halted to prepare for OT II, highway and marine transportability testing was modified or other data substituted in lieu of performing the planned tests.

Productivity and vehicle stability on slopes were tested and reported in the contractor's RDAT/EDT.

Concurrent with MERADCOM testing, CEC performed similar endurance testing of Grader (Serial 471X102), Dozer (Serial 466X102), and Scraper (Serial 464X101). Each work section and associated power section was tested for approximately 400 hours; incidents and maintenance actions were reported by CEC using their FFR format and the MERADCOM MTL. The resulting CEC data are recorded separately from MERADCOM data.

Table 2.1-1. Test Course Negotiated or Worked
(Mission Profile Versus Actual)

Test Item	Percent of Task-Mission Profile Versus Actual	Earthmoving	Stockpiling	Push-Loading	Towing	Hauling	Road Maintenance	Spreading & Leveling	Ditching	Embankment Compact.*	Base Course Compact.*	Asphalt Compact.	Vib. Mode Compact.	Distributing	Travel	Miscellaneous	Test Hours Completed During PQT-G
Compactor (SD)																	
PS T953	Mission Profile									30	30	10	20		10		
WS T954	Actual									0	80	0	10		10		237
Compactor (TF)																	
PS T951	Mission Profile									30	60				10		
WS T952	Actual									0	90				10		293
Distributor I																	
PS T941	Mission Profile													55	35	10	
WS T938	Actual													55	35	10	830
Dozer I																	
PS T943	Mission Profile	60	15	5	5										10	5	
WS T944	Actual	60	16	4	5										10	5	743
Dumper I																	
PS T935	Mission Profile	50		5	30										15		
WS T936	Actual	50		5	30										15		1047
Grader I																	
PS T939	Mission Profile						50	20	10						10	10	
WS T940	Actual						55	15	10						10	10	776
Loader																	
PS T937	Mission Profile	65	20												10	5	
WS T966	Actual	65	20												10	5	936
Scraper I																	
PS T955	Mission Profile	80			5										10	5	
WS T956	Actual	85			0										10	5	223

*Pneumatic mode only

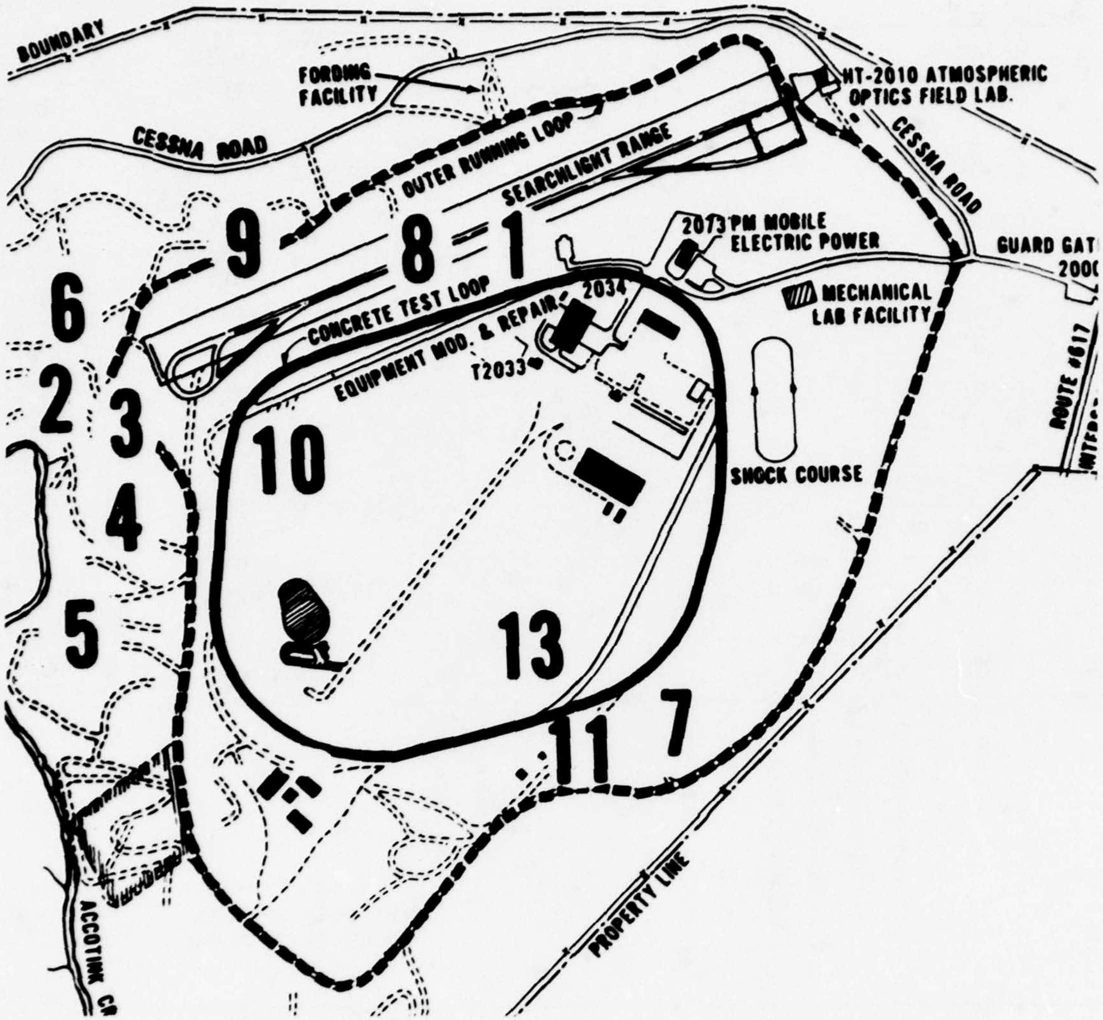


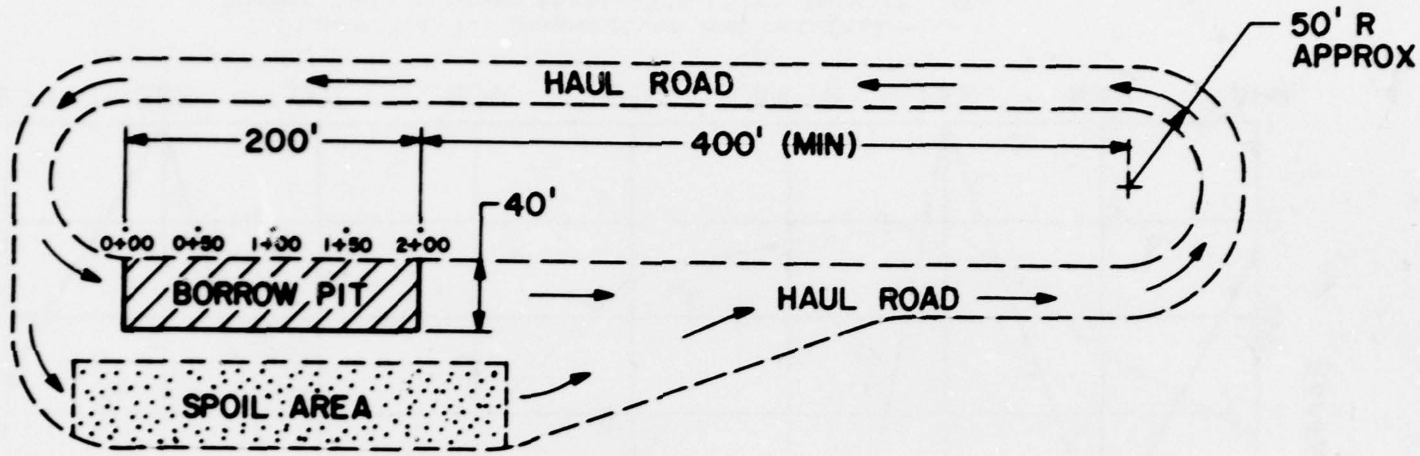
Figure 2.1-1. Test course negotiated/worked by FAMECE (MERADCOM Annex, North Area; Fort Belvoir, VA).

Test Item	Area	Terrain	Soil	Notes
Compactors	1	Flat/to 50% Grade	Concrete	Travel
	3	Hilly/to 50% Grade	Clay/Gravel/Rock	Travel
	7	Flat	Clay/Gravel	Compaction
	9	Flat/to 18% Grade	Clay/Gravel	Travel
	13	Flat	Clay/Gravel	Compaction
Distributor	1	Flat/to 50% Grade	Concrete	Travel, Loaded/Empty
	3	Hilly/Rocky/Rough/ to 27% Grade	Clay/Gravel/Rock	Travel, Loaded/Empty
	9	Flat/to 18% Grade	Clay/Gravel	Distributing Water
	13	Flat	Clay/Gravel	Distributing Water
Dozer	2	Hilly/to 36% Grade	Clay/Gravel	Stockpiling
	7	Flat	Clay/Gravel	Earthmoving (Dozing)
	13	Flat	Clay/Gravel	Pushloading/Stockpiling/ Towing
	1,3,9	See Distributor	See Distributor	Travel
Dumper	4	Hilly/to 36% Grade	Clay/Gravel	Hauling Materials/Cargo
	5,6	Hilly/to 17% Grade	Clay/Gravel	Earthmoving (Hauling)
	13	Flat	Clay/Gravel	Towing
	1,3,9	See Distributor	See Distributor	Travel

Figure 2.1-1. Test course negotiated/worked by FAMECE (MERADCOM Annex, North Area; Fort Belvoir, VA) (Continued).

Test Item	Area	Terrain	Soil	Notes
Grader	2	Hilly/to 36% Grade	Clay/Gravel	Stockpiling
	5,6	Hilly/to 17% Grade	Clay/Gravel	Earthmoving
	7	Flat	Clay/Gravel	Earthmoving
	13	Flat	Clay/Gravel	Stockpiling
	1,3,9	See Distributor	See Distributor	Travel
Loader	8	Flat	Clay/Gravel	Road Maintenance
	10	Flat	Clay/Gravel	Spreading/Leveling/Ditching
	11	Flat	Clay/Gravel	Road Maintenance
	1,3,9	See Distributor	See Distributor	Travel
Scraper	1	Flat/to 50% Grade	Concrete	Travel
	3	Hilly/Rocky/Rough/ to 27% Grade	Clay/Gravel/Rock	Travel
	9	Flat/to 18% Grade	Clay/Gravel	Travel
	13	Flat	Clay/Gravel	Earthmoving (Scraping)

Figure 2.1-1. Test course negotiated/worked by FAMECE (MERADCOM Annex, North Area; Fort Belvoir, VA).



Test Procedure:

1. Load in direction of advancing stations.
2. Travel counterclockwise over haul road to spoil area.
3. Spread over spoil area.
4. Continue counterclockwise over haul road (empty) to borrow pit.
5. Load and repeat cycle. Cycle length ~1500 feet approximately (~ 500 m).

Note: Scraper in push loading mode 50% and self-loading 30%.

Figure 2.1-2. Scraper test course.

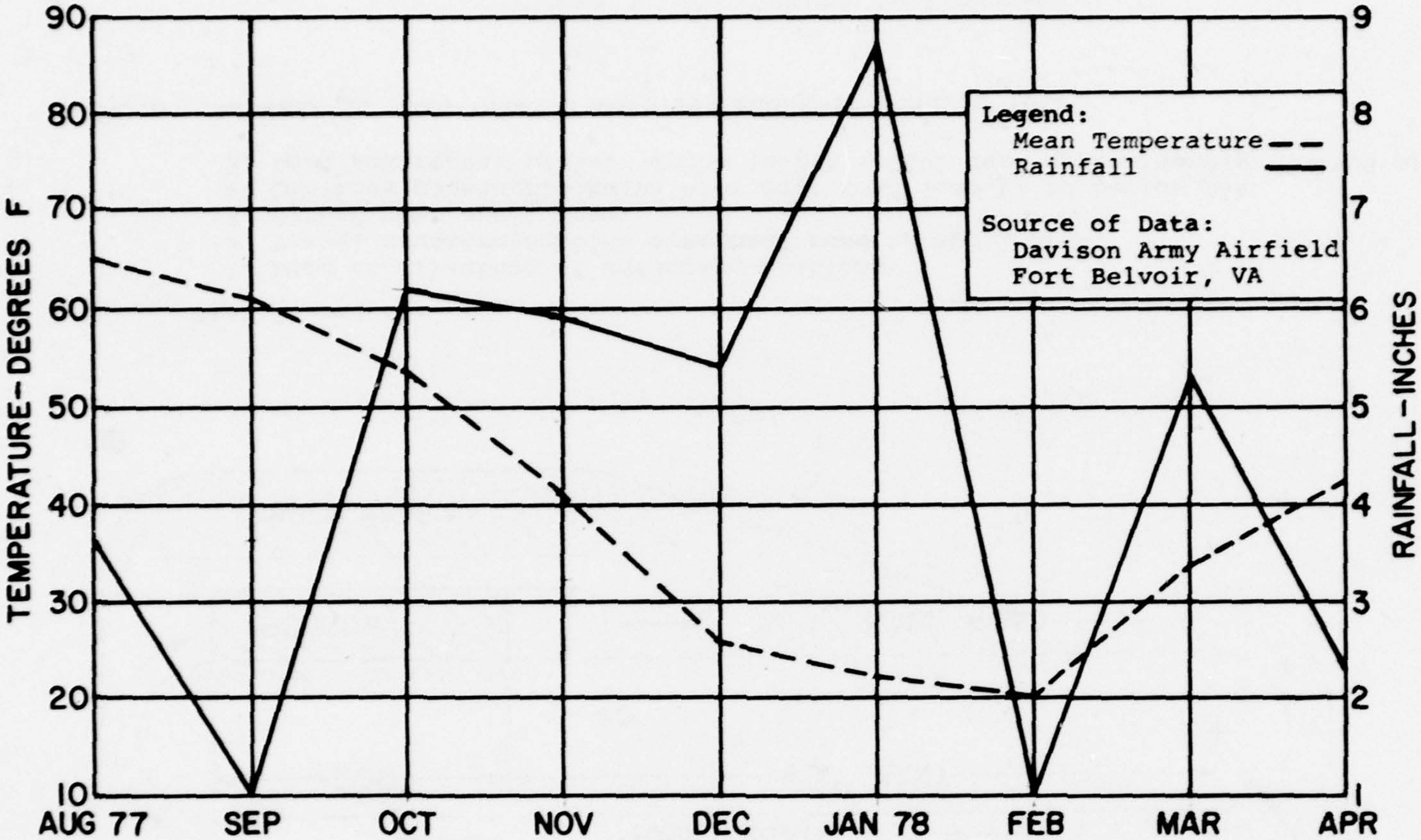


Figure 2.1-3. Temperature and rainfall — August 1977 through April 1978, Fort Belvoir, VA.

2.2 INITIAL INSPECTION

2.2.1 Objectives

a. To determine whether the Maintenance Test Support Package (MTSP) is complete.

b. To ensure that the power sections and work sections are in good operating condition and are reasonably safe for further tests.

c. To identify the fuel and lubricants used.

d. To determine the completeness of the OEM and adequacy of provision for stowage.

2.2.2 Criteria

a. It is essential that FAMECE operate using standard Army fuels and lubricants [MN (ED)(QMR), para 9.a.(1)].

b. It is essential that waterproof and dustproof storage be provided on each power section and work section for maintenance logs, manuals, and other instructional material [MN (ED)(QMR), para 9.a.(12)].

2.2.3 Method

The MTSP provided with each vehicle was examined to determine completeness with respect to manuals; repair parts; and tools, special tools, and TMDE. A record was made of the items included in the MTSP and compared with the listing (DD Form 250) furnished by PM FAMECE. Shortages in the inventory were noted and reported to the material developer.

The checklists provided in the Operator's and Organizational Maintenance Manuals for individual equipment, in addition to the detailed inspection checklists provided in PQT-G detail test plan, were used for the initial inspection.

Specific areas of inspection for each test item included:

a. Stowage--the maintenance log, manuals, and other instructions were stowed in locations specified in the instruction manuals. The adequacy of stowage facilities was measured against the essential requirements for waterproof, dustproof, and free draining areas and for noninterference of stowage items or facilities with proper functioning of catches and release devices.

b. Engine operation and fuel--engine was started to ensure that it was operational and would operate using standard Army fuels and lubricants.

c. Fluids sampled and analyzed--to verify the usage of military lubricants and coolants.

2.2.4 Results

Detailed results of the initial inspection of each test item are given in Tables 2.2-1 through 2.2-10. As shown in the tables, the correction of certain deficiencies was deferred until repair became necessary, parts were available, or until after testing. Corrections were reported by EPR and MTL.

The toolbox provided on the power section was adequate for the OEM tools issued for operator level maintenance. Likewise, the canvas containers for logbooks and lube orders were satisfactory, although the location on the immediate front of the power section (next to the radiator grille) is vulnerable to brush.

The MTSP observed during initial inspection was incomplete because no parts list was available to check against the DD Form 250, Material Inspection and Receiving Report, and no list of special tools was available (see paragraph 2.8, MAINTENANCE ANALYSIS).

2.2.5 Analysis

a. A MTSP list was not received prior to or during the test. Missing MTSP elements caused some delay of subsequent testing because of lack of repair parts.

b. Test items received from the contractor were in good operating condition and ready for test with respect to the comments of Tables 2.2-1 through 2.2-10.

c. The equipment operates using standard Army fuels and lubricants.

d. Adequate provision has been made for storage of maintenance logs, manuals, and other instructions.

Table 2.2-1. Initial Inspection of FAMECE Compactor (TF)

Power Sec -T951 Eng Hr 108.9
Work Sec -T952 Accum Hr 86.9

Ref No.	Component	Problem
1	Hydraulic hoses	Chafing
2	Hydraulic hose	Piece of outer layer missing
3	RPM gauge	Did not register correctly
4	Hood handle	Bent and painted over
5	Warning decals	Peeling
6	Tailgate lock/unlock manual control	Out of alignment
7	Ballast bucket	Upper left part dented slightly
8	Dolly wheel	Right side wobbled
9	Neutral lever	Does not ride in detent
10	Disconnect-rod end support	Bent

Items installed after initial inspection:
- Windshield and wiper assembly.
- ROPS.
- Cab support structure.
- Cab canvas cover.
- Rearview side mirrors (2).

Table 2.2-2. Initial Inspection of FAMECE Compactor (SD)

Power Sec -T953 Eng Hr 62.0
Work Sec -T954 Accum Hr 64.1

Ref No.	Component	Problem
1	Drum scrapers	Out of adjustment
2	Tire, left rear	Groove around entire circumference (1/2" W x 1/8" D)
3	Engine access cover	Cutting hydraulic lines
4	Lock pin, hydraulic cover clamp	Missing
5	U-clamp, water tank tubing	Broken
6	Bolt, spool valve	Missing
7	Hood handle, right	Missing
8	Neutral lever	Will not remain in detent
9	Miscellaneous	Oil leakage

Items installed after initial inspection:
- Windshield and wiper assembly.
- ROPS.
- Cab support structure.
- Cab canvas cover.
- Rearview side morrors (2).

Table 2.2-3. Initial Inspection of FAMECE Distributor

Power Sec -T941 Eng Hr 65.9
Work Sec -T938 Accum Hr 120.7

Ref No.	Component	Problem
1	Wiring	Function and destination of two wires unknown
2	Taillight, rear, curb	Out
3	Miscellaneous	Oil seepage
4	Battery cable	Cut, 3/8" long
5	Air cleaner indicator	Painted over
6	Power cluster breather	Screens missing
7	Tachometer	Not registering properly, and contained condensation

Items installed after initial inspection:
- Windshield and wiper assembly.
- ROPS.
- Cab support structure.
- Cab canvas cover.
- Rearview side mirrors (2).

Table 2.2-4. Initial Inspection of FAMECE Dozer

Power Sec -T943 Eng Hr 78.2
Work Sec -T944 Accum Hr 140.5

Ref No.	Component	Problem
1	Miscellaneous	Oil seepage
2	Tires	Overinflated

Items installed after initial inspection:
- Windshield and wiper assembly.
- ROPS.
- Cab support structure.
- Cab canvas cover.
- Rearview side mirrors (2).

Table 2.2-5. Initial Inspection of FAMECE Dumper

Power Sec -T959 Eng Hr 25.4
Work Sec -T960 Accum Hr 20.4

Ref No.	Component	Problem
1	Covers in vicinity of dolly wheel axles	Dented and painted over
2	Transmission	Minor leak in vicinity of speedometer generator
3	Muffler	Abrasion marks from contacting hood stiffener
4	Automatic relief valve on Power Section	Missing; had been replaced by a petcock valve

Items installed after initial inspection:
- Windshield and wiper assembly.
- ROPS.
- Cab support.
- Cab canvas cover.
- Rearview side mirrors (2).

Table 2.2-6. Initial Inspection of FAMECE Dumper

Power Sec -T935 Eng Hr 19.6
Work Sec -T936 Accum Hr 14.1

Ref No.	Component	Problem
1	Hood locking mechanism	Sprung
2	Valve cover gasket	Leaking oil
3	Valve cover	Pin hole
4	Windshield wiper controls	Lettering coming off
5	Dolly wheels	Drifting
6	Dolly wheel chain	Broken

Items installed after initial inspection:

- Windshield and wiper assembly.
- ROPS.
- Cab support structure.
- Cab canvas cover.
- Rearview side mirrors (2).

Table 2.2-7. Initial Inspection of FAMECE Grader

Power Sec -T939 Eng Hr 272.4
Work Sec -T940 Accum Hr 119.5

Ref No.	Component	Problem
1	Grader circle reverse ring gear	Scored slightly
2	Grader blade	Minor dents
3	Radiator cooling fins	Dented slightly
4	Wing nuts (3)	Bent (used to mount the grader hydraulic control package to the cockpit of the power unit)
5	Air pressure gauge	On power section remained marginally in red
6	Hydraulic tank	Low on fluid; viewport backplate missing
7	Bypass valve	No instructional nameplate
8	Power cluster	Screen missing; filter clogged

Items installed after initial inspection:
- Windshield and wiper assembly.
- ROPS.
- Cab support structure.
- Cab canvas cover.
- Rearview side mirrors (2).

Table 2.2-8. Initial Inspection of FAMECE Loader

*Power Sec -T938   Eng   Hr 156.4
Work Sec -T966   Accum Hr 13.3

*Previously used with distributor

Ref No.	Component	Problem
1	Wheel service brake, front right	Out of adjustment
2	Miscellaneous	Oil leakage and seepage
3	Landing jack	Damaged slightly
4	Coupling device	Dirt and grit lodged in mechanism; coupling difficult
5	Hydraulic lines	Chafed
6	Power cluster filter	Screen missing; filter clogged
7	Tires	Underinflated
8	Transmission fluid level	2-1/2 inch above full mark

Items installed after initial inspection:
- Windshield and wiper assembly.
- ROPS.
- Cab support structure.
- Cab canvas cover.
- Rearview side mirrors (2).

Table 2.2-9. Initial Inspection of FAMECE Scraper

Power Sec -T955 Eng Hr 28.0
Work Sec -T956 Accum Hr 19.5

Ref No.	Component	Problem
1	Steering valve assembly	Oil leak
2	Transmission control lever	Will not rest in detents
3	Anchor lock pin hole	Hole distorted
4	Miscellaneous	Oil leaks
5	Hydraulic hoses (metal covered)	Chafing of hoses at manifold
6	Tire, left rear	Underinflated
7	Electric cable clamp on steering valve assembly	Missing hardware (in vicinity of of parking brake control

Items installed after initial inspection:
- Windshield and wiper assembly.
- ROPS.
- Cab support structure.
- Cab canvas cover.
- Rearview side mirrors (2).

Table 2.2-10. Initial Inspection of FAMECE Distributor

Power Sec -T957 Eng Hr 10.3
Work Sec -T958 Accum Hr

Ref No.	Component	Problem
1	Spray nozzle air valve	Air leak at flange of left rear valve
2	Nonskid material	Peeling from cab floor, fender, and hydraulic tank
3	Hydraulic line inside tank	Outer layer of hose cut by edge of opening in baffle
4	Coolant surge tank sight glass	Painted over
5	Coupler unlock	Push-pull knob missing
6	Logbooks	Inserts and log sheets missing
7	Miscellaneous fittings	Leaking
8	Wheelwell access cover (left front)	Sharp corner not rounded off and panel butts against hydraulic line
9	Hydraulic line elbow fittings	Bolt lengths insufficient
10	Speedometer generator	Minor leak
11	Brake line to Work Section	Line to master cylinder butts against tank

Items installed after initial inspection:

- Windshield and wiper assembly.
- ROPS.
- Cab support structure.
- Cab canvas cover.
- Rearview side mirrors (2).

2.3 TRANSPORTABILITY

2.3.1 Rail Transportability

2.3.1.1 Objective

The objective of the railcar transportability tests was to determine whether the FAMECE vehicles can be transported by rail and:

a. To determine the adequacy of the vehicle tiedown points.

b. To determine unusual requirements or problems associated with transporting FAMECE by rail.

c. To determine whether FAMECE can be transported by rail without sustaining structural or mechanical damage.

2.3.1.2 Criteria

a. It is essential that FAMECE be designed to permit worldwide movement by rail with no/or a minimum of disassembly [MN (ED) (QMR), paragraph 9.a.(15)].

b. It is essential that FAMECE tiedown devices for rail be designed to withstand accompanying shock and vibration environments [MN (ED) (QMR), paragraph 10.g].

2.3.1.3. Method

Each FAMECE vehicle was placed on a rail flatcar and positioned longitudinally and laterally to obtain the most favorable tiedown angles with respect to vehicle tiedown points and railcar stake pockets. The ROPS, cab, and windshield were removed from the power section; the windshield was secured to the hood of the power section using the tie points provided.

The railcar used in the test weighed 51,200 pounds. Individual FAMECE vehicle weights varied from 24,000 to 29,600 pounds.

FAMECE technical manuals were checked for blocking and tiedown instructions; none was found.

Approved Association of American Railroad (AAR) tiedown procedures for wheeled construction equipment were followed with one significant exception. The most recent AAR procedures specify that for rubber-tired wheeled vehicles, primary tiedowns must be wire rope tightened with turnbuckles. However, to reduce tiedown installation time during the multiple test series, and with Transportation Engineering Agency (TEA) concurrence , chains and loadbinders were used instead for the dumper, distributor, scraper, grader, and S.D. compactor. These vehicles were tied down by four 16-foot lengths of 3/8-inch steel chain with a breaking strength of 11,500 pounds. The chains were run through clevises placed on each vehicle tiedown used (two in front, two in back) and through stakepockets on the flatcar; the chains were tightened with loadbinders. On the remaining vehicles, rope with a breaking strength of 33,000 pounds was used. Turnbuckles were used to tighten the wire rope according to AAR procedures. Individual vehicle tiedown patterns and the wheel blocking pattern are illustrated in Figures 2.3-1 through 2.3-11.

Blocking of vehicle wheels was in accordance with approved AAR procedures including nailing of blocks to the railcar floor. Because of the width of the tires, three blocks were placed against the road surface both fore and aft of each wheel. Wheels of the compactor section were blocked on each of the four pairs of wheels at the most accessible points. Lateral movement was prevented in all cases, with a block centered against the outside of each tire. Block dimensions and position of wheel blocks are shown in Figure 2.3-1.

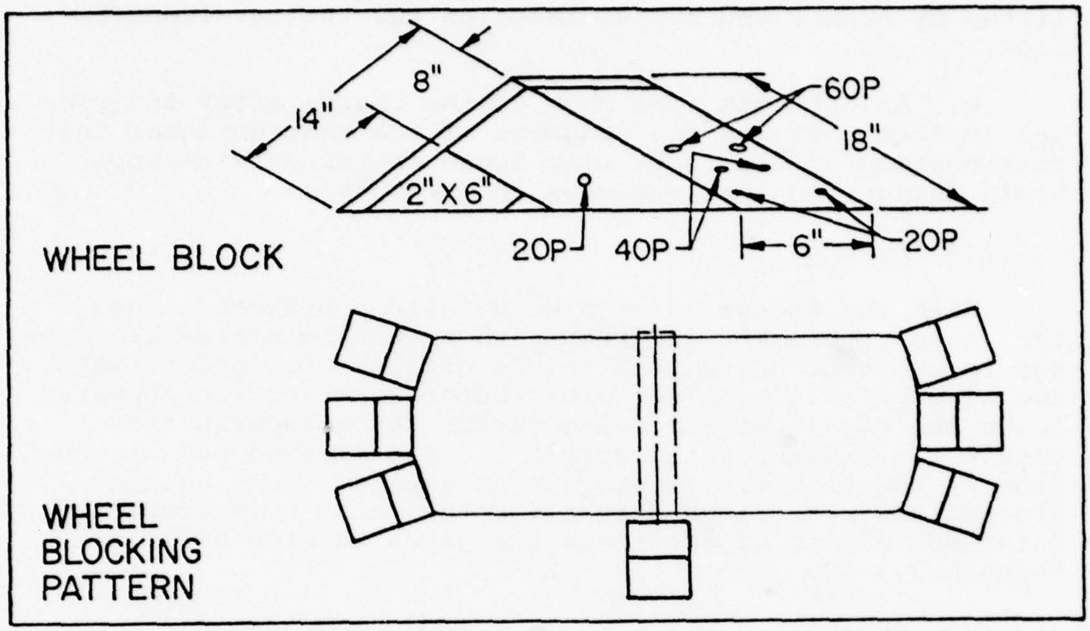


Figure 2.3-1. Wheel blocking pattern and wheel block.

Six accelerometers were placed on the vehicle frame near the pintle hooks on both sections to measure and record impact forces in the vertical, lateral, and horizontal directions. A photocell timer was used in determining the speed of the test vehicle and flatcar on impact.

A winch-driven dolly car was used to pull the flatcar up an inclined rail to predetermined heights which permitted the flatcar to attain the desired speed after release. The flatcar was then released and it rolled down the incline, reaching the specified speed before colliding with four impact cars. The impact cars were a gondola, boxcar, and two flatcars with a combined weight of 230,000 pounds. An examination of blocks and tiedowns and a visual inspection of the vehicles was performed after each impact.

The impact tests were performed in accordance with TOP 1-2-500 6.c with the following exceptions:

a. The electric timer used to determine the approximate speed of the railcar at impact was placed *alongside* the tracks and approximately 10 feet *before* the point of impact rather than *on* the tracks and *ahead* of the point of impact.

b. Because the impact car could not be reversed on the test track (for rear humping), each vehicle was untied,

lifted by crane, and repositioned on the railcar front-to-back.

c. Adjustments were made to the chains after individual impacts. It was the judgment of the test engineer that continuation of the tests with loose chains or wire rope would damage the test vehicles and be unsafe.

2.3.1.4 Results

With the exception of a weld failure between a fuel tank support bracket and frame, there was no noticeable damage to the test units as a result of the rail impact tests. The clevis failure on the distributor work section appeared to be the result of a missing cotter which secured the clevis pin. Without the cotter the pin slipped out of one side of the clevis, allowing it to expand. Each unit started and was driven away after the tests were completed. Detailed results of the tests are given in Figures 2.3-12 through 2.3-19.

2.3.1.5 Analysis

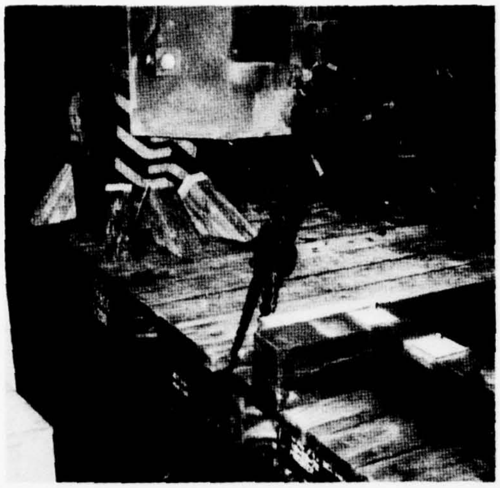
The single incident that occurred during the rail impact test was the broken support bracket weld observed after the 8-mi/h test. Examination showed that the weld between the bracket and the frame was thoroughly rusted, indicating that the break had occurred before the test. A review of the test record revealed that this weld had, indeed, failed before and had been repaired; because of limited access, the tank was not removed and a strong weld was not made.

Subsequent endurance testing of each vehicle subjected to the impact test indicated no apparent related failures.

It is therefore concluded from this test that:

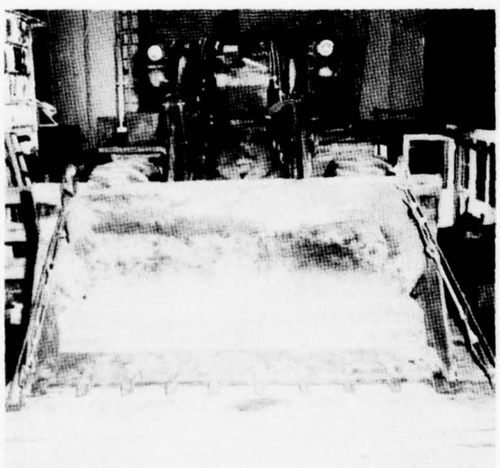
a. While it was not the objective of this test to prove a tiedown system, the tiedown and blocking procedures used in the test are adequate; although the chain and wire rope used stretched and required retightening, indicating possible need for larger diameter wire rope. The grader was tested without retightening of the chain to determine if blocking would retain the vehicle. Blocking and tiedowns did retain the vehicle without subsequent damage.

b. When blocked and tied down in the manner described, the FAMECE vehicles are capable of withstanding the hazards of rail shipment without damage.

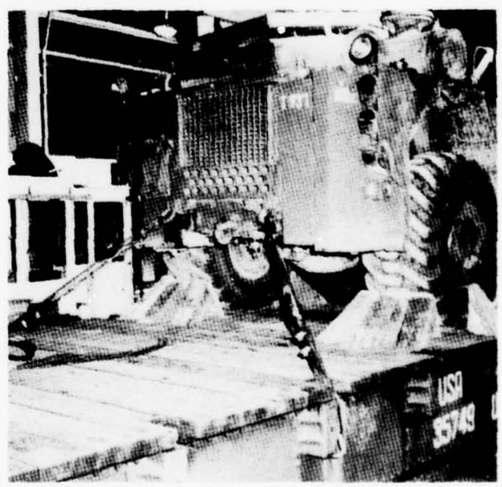


Typical power section tiedown with chains and loadbinder.

Typical power section tiedown with chains and loadbinders.

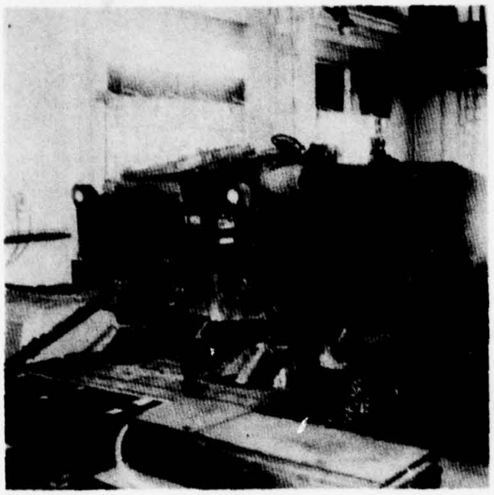


Loader tiedown with wire rope.

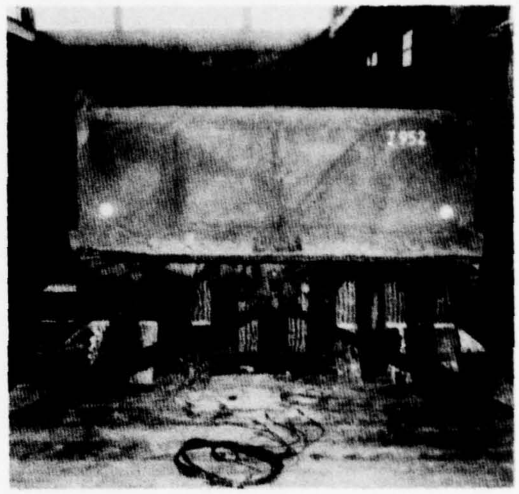


Power section tiedown with wire rope.

Figure 2.3-2. Vehicle tiedown.

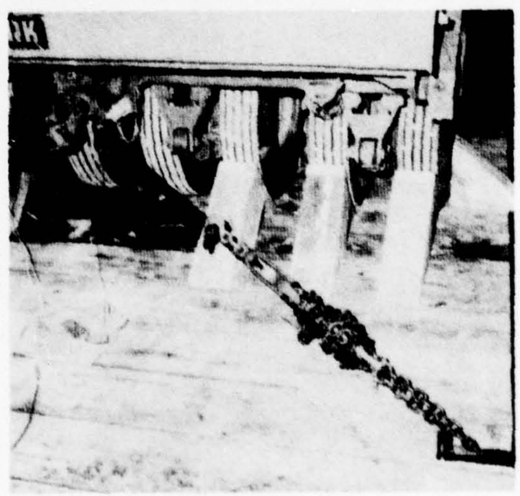


Typical power section tiedown and blocking.



Tiedown and blocking (T.F. Compactor).

Blocking detail (T.F. Compactor).



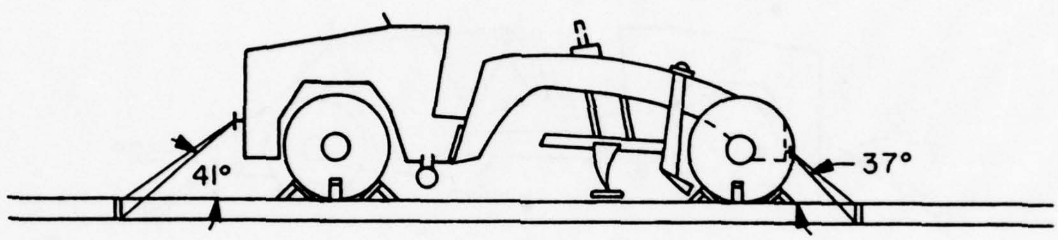
Blocking detail (T.F. Compactor).

Figure 2.3-3. Vehicle tiedown — T.F. Compactor.

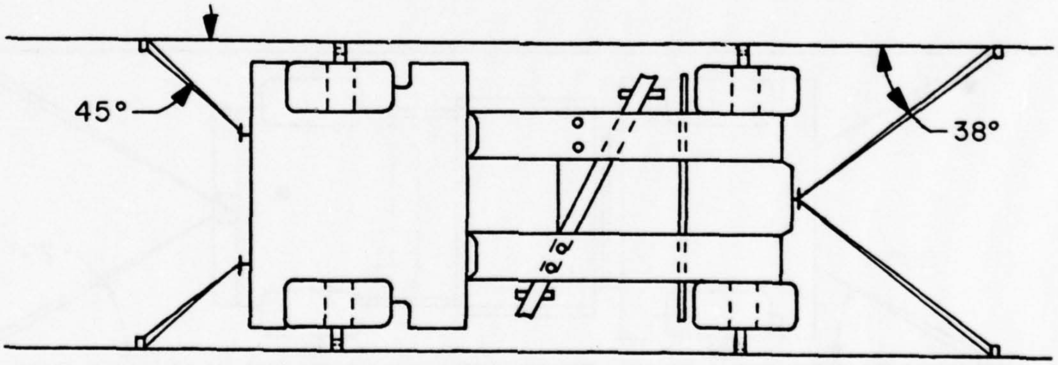
TEST ITEM — Grader (T950, Serial 471X102)
with Power Section (T949, Serial 446X116)

Vehicle Dimensions: 310 in. long, 103 in. wide, 97 in. high
Wheelbase: 235 in.
Shipping Weight: 29,950 lb

TIEDOWN PATTERN



(Side)



(Top)

Figure 2.3-4. Vehicle tiedown — Grader.

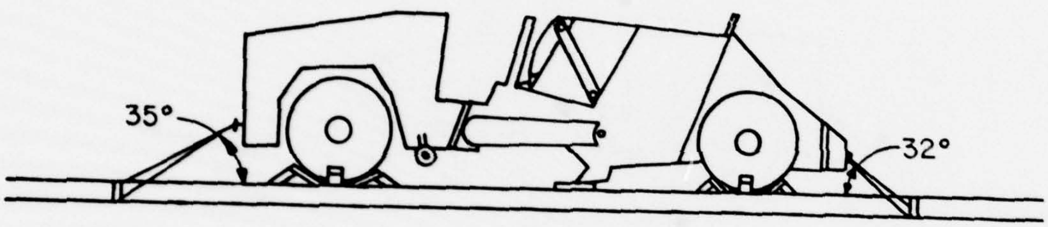
TEST ITEM — Scraper (T956, Serial 464X102)
with Power Section (T955, Serial 466X114)

Vehicle Dimensions: 312 in. long, 105 in. wide, 97 in. high

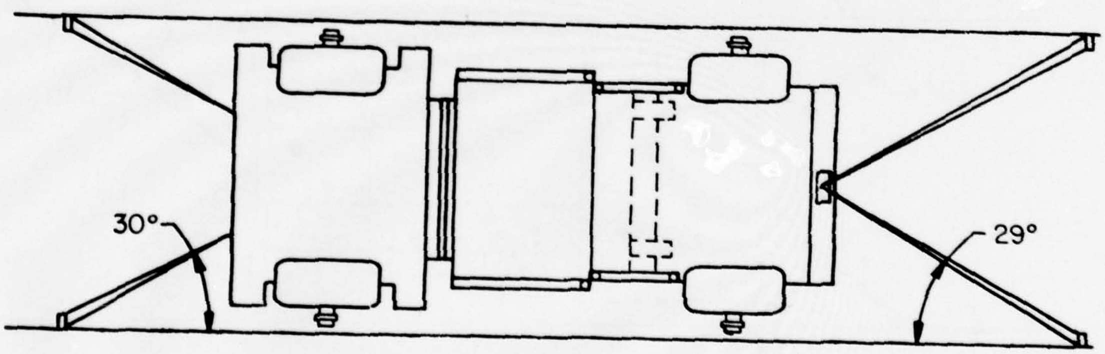
Wheelbase:

Shipping Weight: 30,000 lb

TIEDOWN PATTERN



(Side)



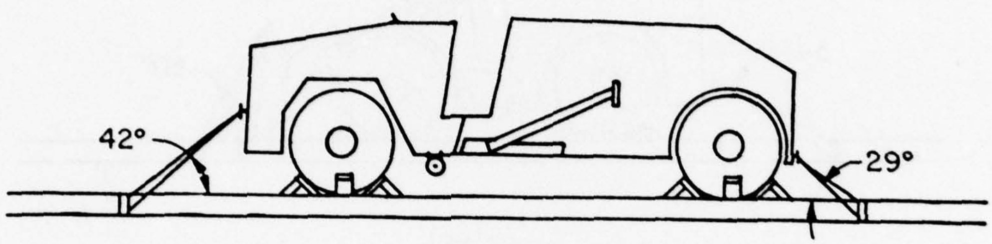
(Top)

Figure 2.3-5. Vehicle tiedown — Scraper.

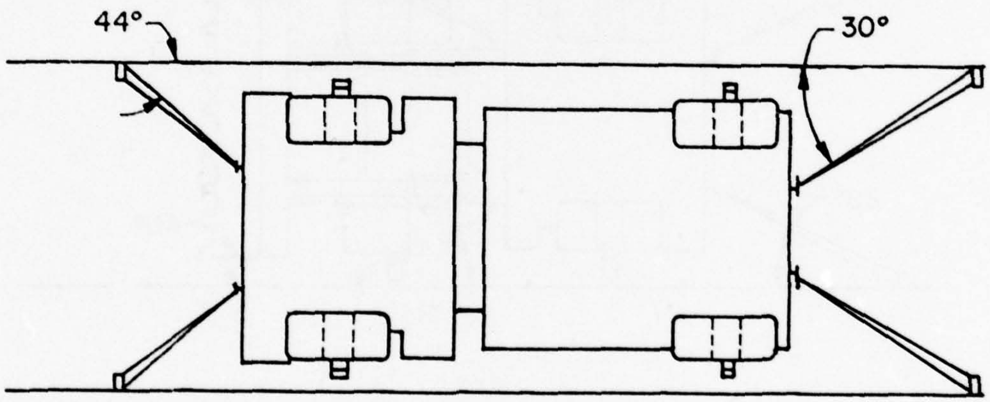
TEST ITEM — Dumper (T960, Serial 467X104)
with Power Section T959, Serial 446X113

Vehicle Dimensions:	276 in. long, 104 in. wide, 97 in. high
Wheelbase:	182 in.
Shipping Weight:	28,300 lb

TIEDOWN PATTERN



(Side)



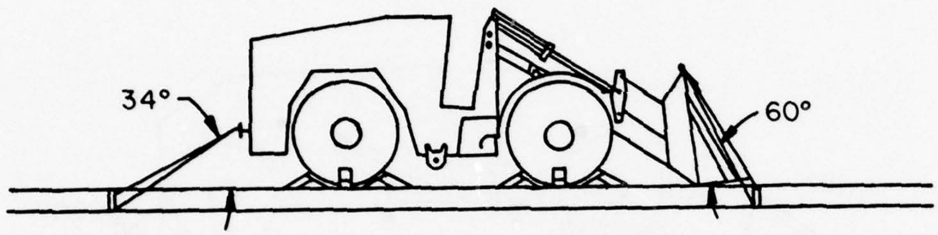
(Top)

Figure 2.3-6. Vehicle tiedown — Dumper.

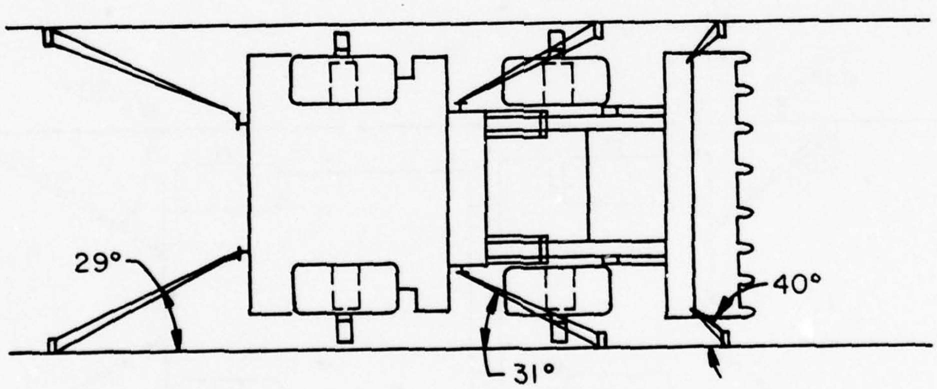
TEST ITEM — Loader (T966, Serial 465X102)
with Power Section (T937, Serial 446X105)

Vehicle Dimensions:	262 in. long, 105 in. wide, 97 in. high
Wheelbase:	121 in.
Shipping Weight:	29,500 lb

TIEDOWN PATTERN



(Side)



(Top)

Figure 2.3-7. Vehicle tiedown — Loader.

TEST ITEM — Dozer (T944, Serial 466X101)
with Power Section (T943, Serial 446X107)

Vehicle Dimensions:	258 in. long, 105 in. wide, 97 in. high
Wheelbase:	112 in.
Shipping Weight:	29,100 lb

TIEDOWN PATTERN

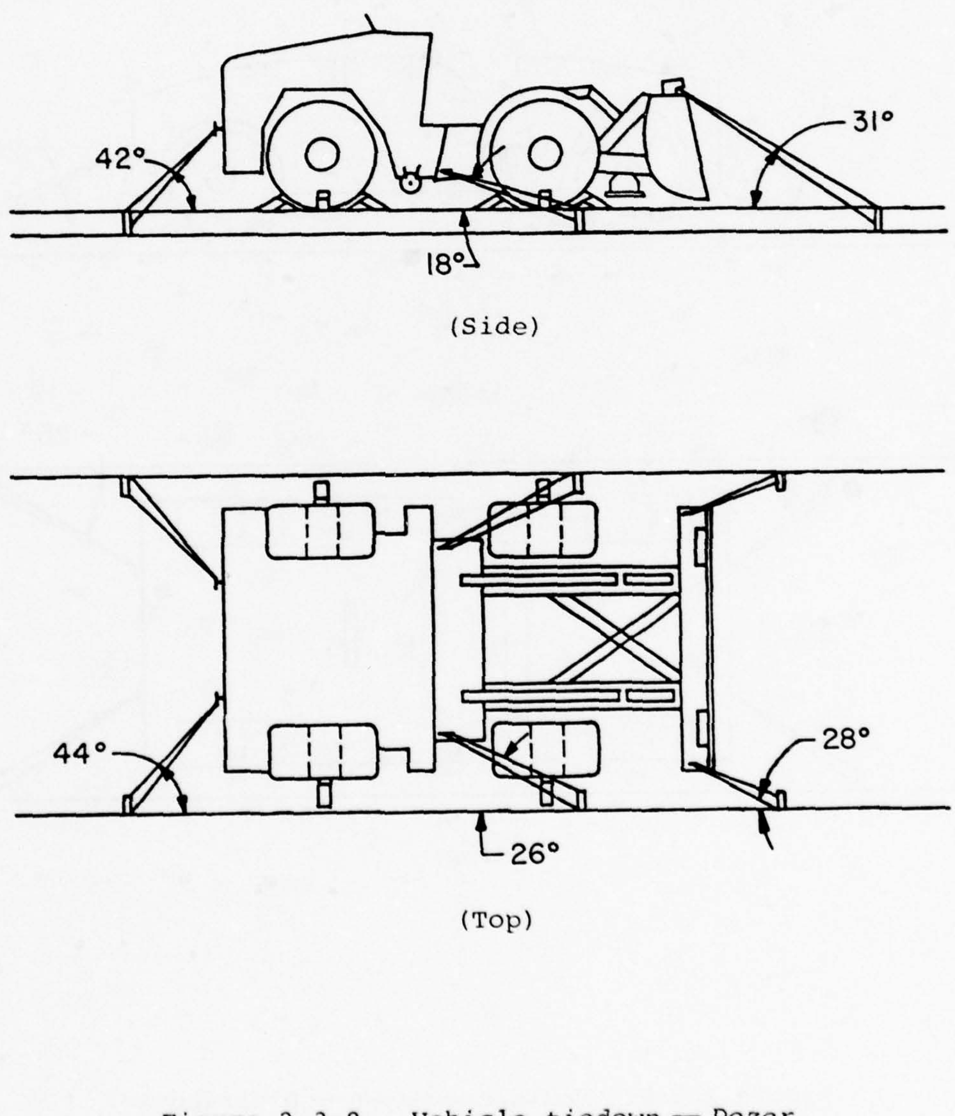
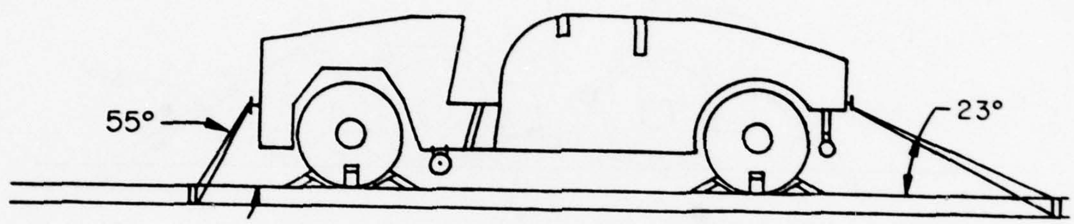


Figure 2.3-8. Vehicle tiedown — Dozer.

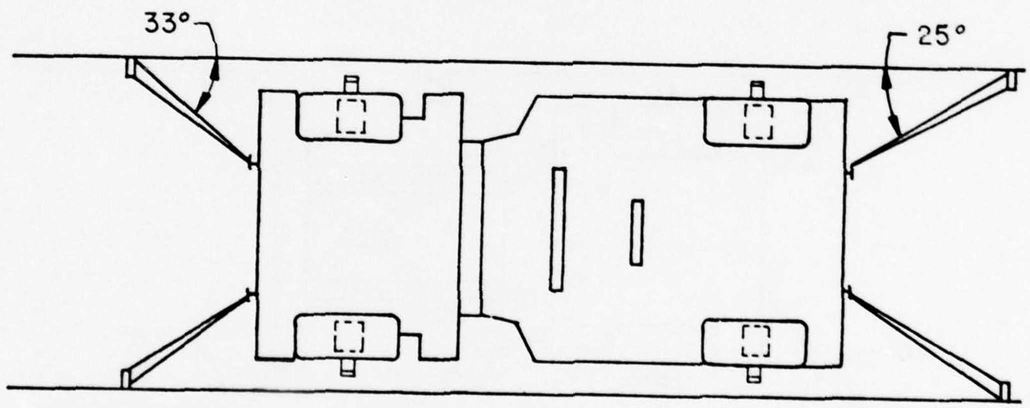
TEST ITEM — Distributor (T938, Serial 468X101)
with Power Section (T941, Serial 446X106)

Vehicle Dimensions: 284 in. long, 104 in. wide, 97 in. high
Wheelbase: 182 in.
Shipping Weight: 27,500 lb

TIEDOWN PATTERN



(Side)



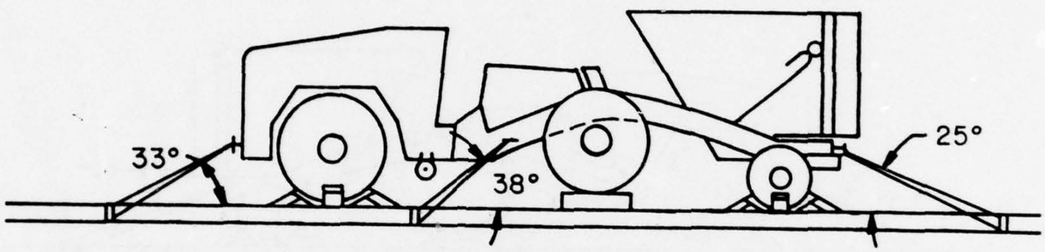
(Top)

Figure 2.3-9. Vehicle tiedown — Distributor.

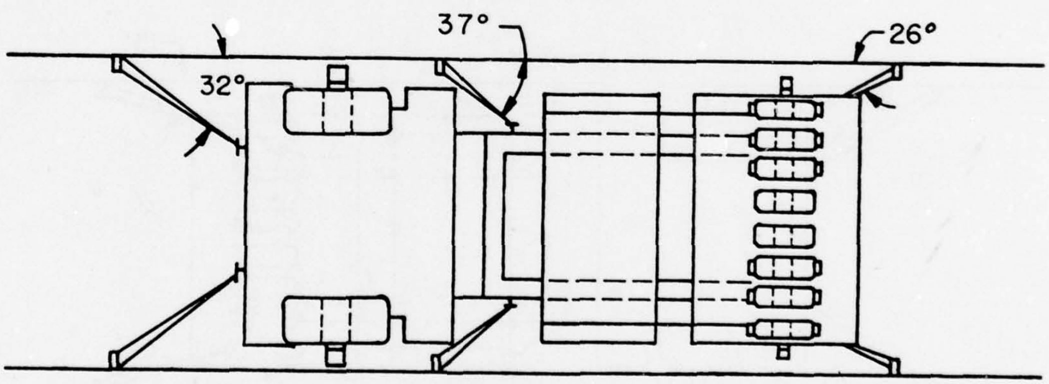
TEST ITEM — Smooth-Drum Compactor (T954, Serial 470X101)
with Power Section (T953, Serial 446X112)

Vehicle Dimensions:	275 in. long, 105 in. wide, 97 in. high
Wheelbase:	186 in.
Shipping Weight:	29,200 lb

TIEDOWN PATTERN



(Side)



(Top)

Figure 2.3-10. Vehicle tiedown — Smooth-Drum Compactor.

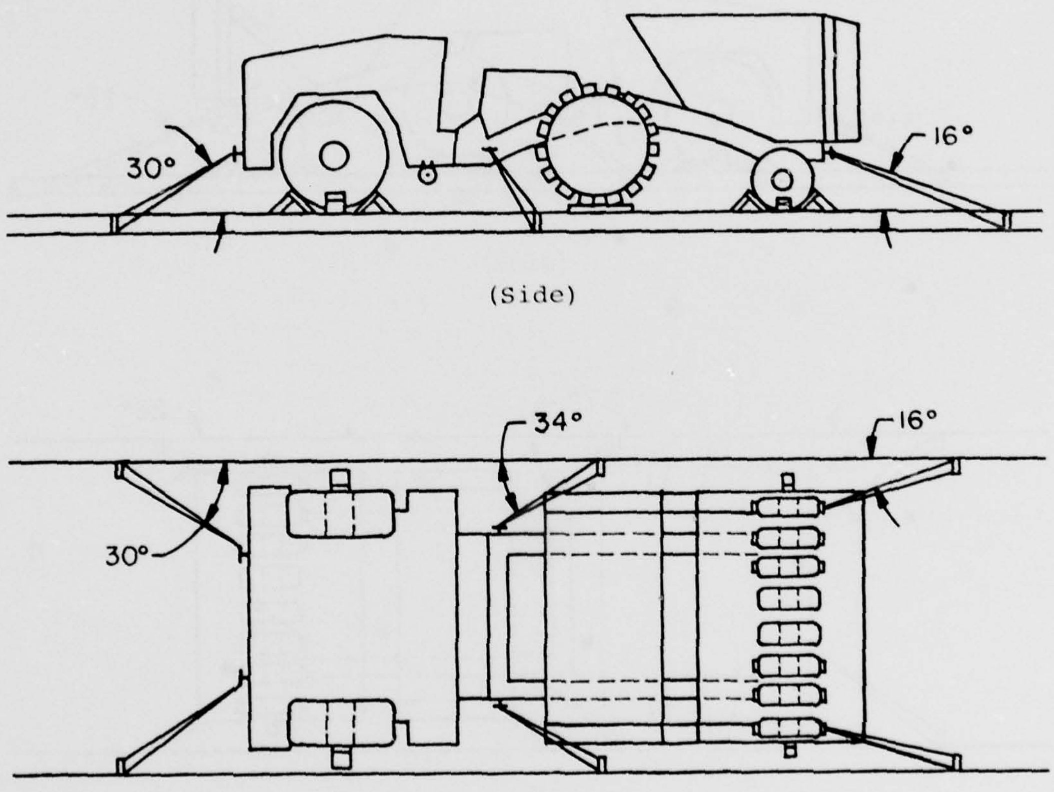
TEST ITEM — Tamping-Foot Compactor (T952, Serial 469X101)
with Power Section (T951, Serial 446X110)

Vehicle Dimensions: 275 in. long, 105 in. wide, 97 in. high

Wheelbase:

Shipping Weight: 29,900 lb

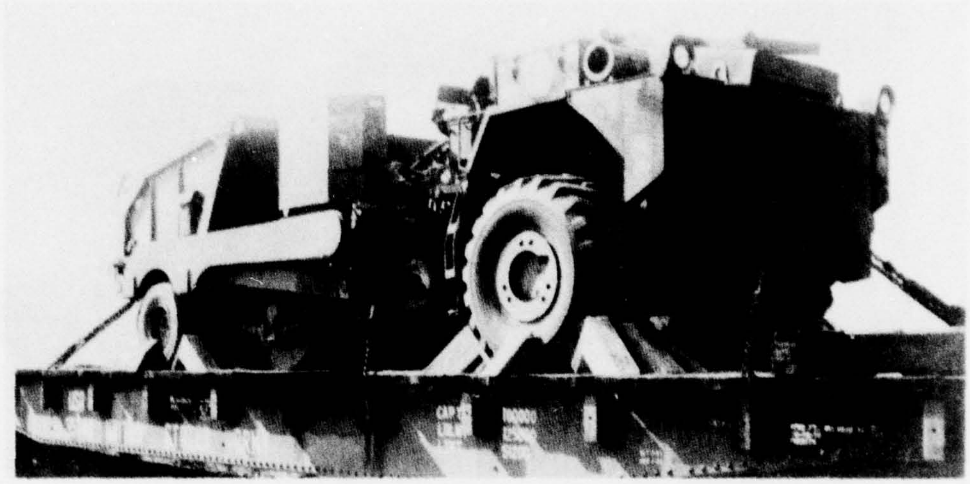
TIEDOWN PATTERN



(Top)

*Chains added after first series of 4-, 6-, and 8-mi/h impacts.

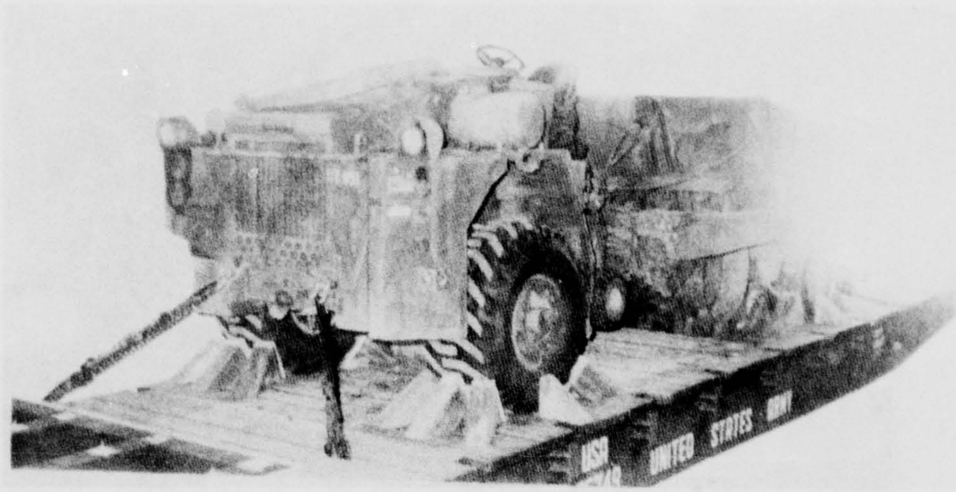
Figure 2.3-11. Vehicle tiedown — Tamping-Foot Compactor.



TEST 4,5,6 ◀ DIRECTION OF TRAVEL ▶ TEST 1,2,3

Test No.	Impact Speed (mi/h)	Results	
		Power Module	Work Module
1	4.15		Chains loose (retightened).
2	5.59		Chains loose (retightened).
3	8.04		Chain elongated 2 links (retightened).
4	4.54	Chains loose (retightened).	
5	6.24	Chains loose (retightened).	
6	8.41		Right side chain broken.

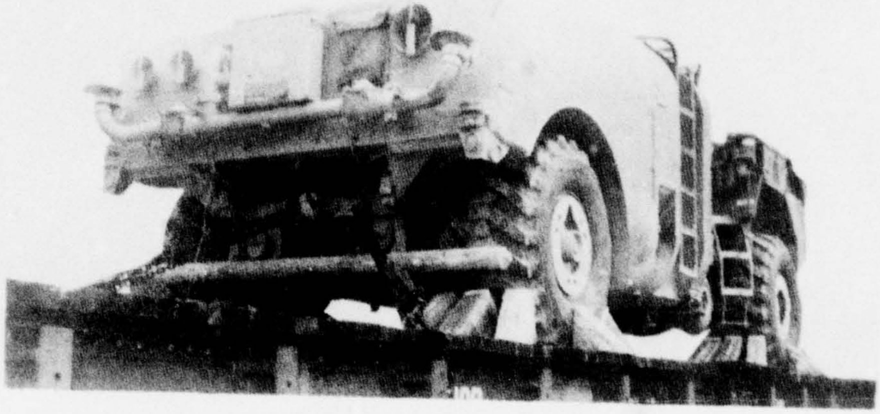
Figure 2.3-12. Smooth-Drum Compactor — rail transportability test results.



TEST 1,2,3 ◀ DIRECTION OF TRAVEL ▶ TEST 4,5,6

Test No.	Impact Speed (mi/h)	Results	
		Power Module	Work Module
1	4.24		Left chain loose (retightened).
2	6.01		Both chains loose (retightened).
3	8.17	Right side wheel block sheared off (replaced).	Left chain broke (replaced).
NOTE:	Pair of chains added at center of roller prior to conducting tests 4, 5 and 6.		
4	4.30		
5	6.05		Middle chain loose (retightened).
6	8.21		Chain elongated 1 link.

Figure 2.3-13. Tamping-Foot Compactor — rail transportability test results.



TEST 1,2,3 ◀ DIRECTION OF TRAVEL ▶ TEST 4,5,6

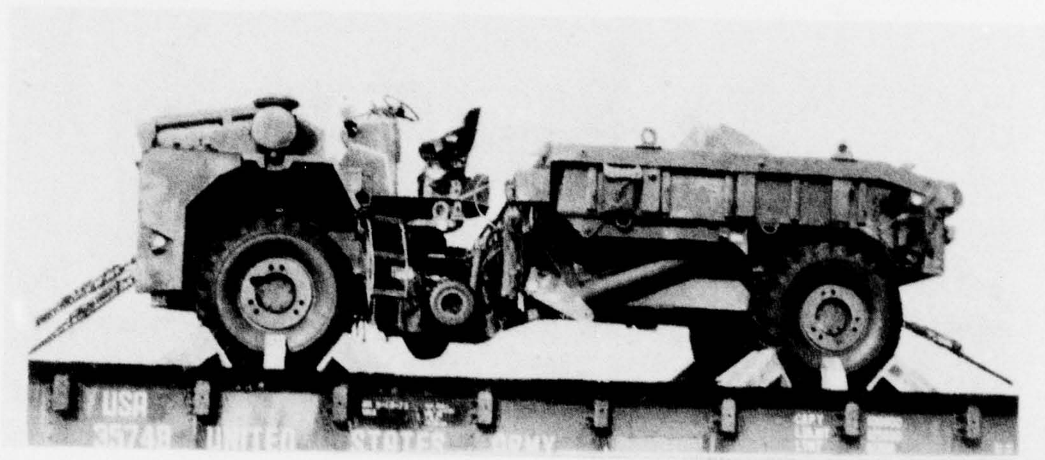
Test No.	Impact Speed (mi/h)	Results	
		Power Module	Work Module
1	4.00		Clevis on curbside failed. Clevis was replaced and test continued.
2	5.87		Chains loose (retightened).
3	8.11		Chain elongated, reached limit.
NOTE:	New chains installed prior to conducting tests 4, 5 and 6.		
4	4.30		
5	6.02	Chains loose (retightened).	
6	8.11		

Figure 2.3-14. Distributor — rail transportability test results.

TEST 4,5,6 ◀ DIRECTION OF TRAVEL ▶ TEST 1,2,3

Test No.	Impact Speed (mi/h)	Results	
		Power Module	Work Module
1	3.95		
2	6.23		Wire ropes loose (retightened).
3	8.37		Wire ropes on middle section loose (retightened).
4	4.58		
5	6.33		Wire ropes loose (retightened).
6	8.54	Wire ropes elongated 2.5 inches.	

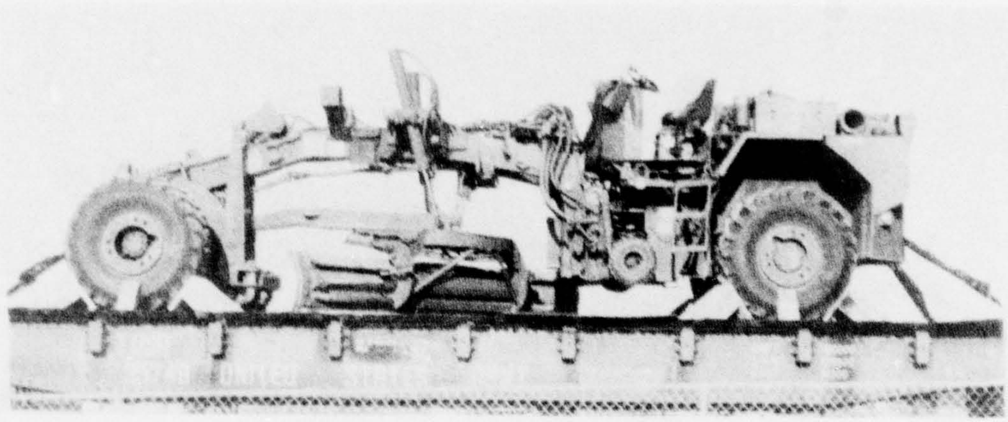
Figure 2.3-15. Dozer — rail transportability test results.



TEST 1,2,3 ◀ DIRECTION OF TRAVEL ▶ TEST 4,5,6

Test No.	Impact Speed (mi/h)	Results	
		Power Module	Work Module
1	5.08		
2	5.57		Chains loose (retightened).
3	7.97	Hydraulic tank support bracket cracked.	Chains elongated 2 links (retightened).
4	4.10		
5	5.85	Chains elongated 1 link.	
6	7.69	Chains elongated 2 additional links.	

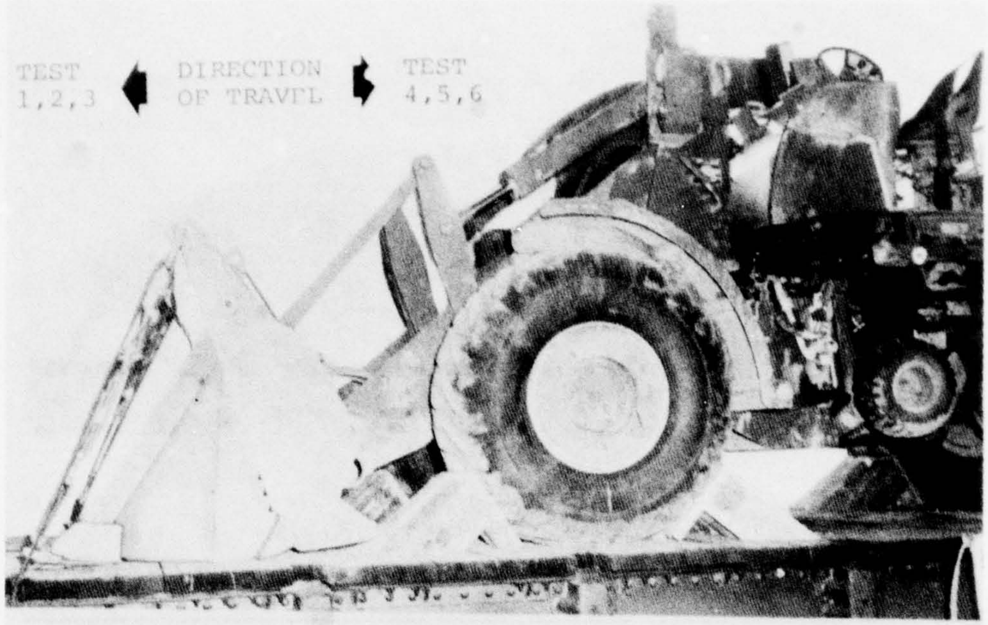
Figure 2.3-16. Dumper — rail transportability test results.



TEST 1,2,3 ◀ DIRECTION OF TRAVEL ▶ TEST 4,5,6

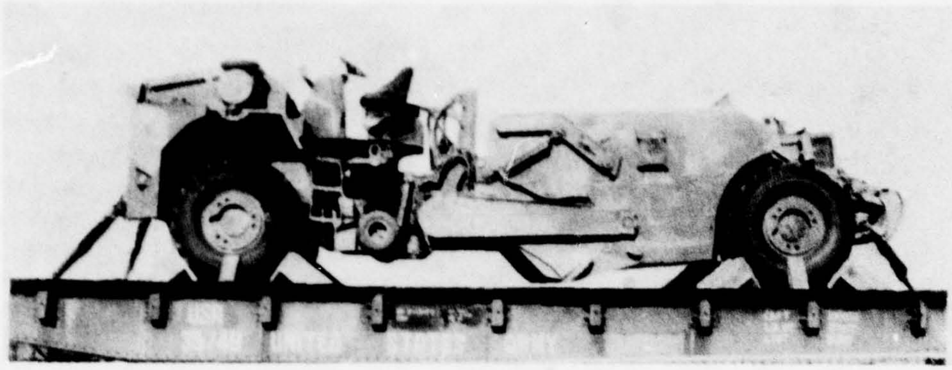
Test No.	Impact Speed (mi/h)	Results	
		Power Module	Work Module
1	4.27		
2	5.91		Small elongation on chains.
3	7.89	All chains elongated 2 inches.	All chains elongated 2 inches.
4	4.39		
5	6.13	Right side chain elongated 2 links.	
6	8.12	Right side chain elongated 1 more link.	

Figure 2.3-17. Grader — rail transportability test results.



Test No.	Impact Speed (mi/h)	Results	
		Power Module	Work Module
1	4.00		
2	6.30		Wire rope on left side loose (retightened).
3	8.31		
4	4.37		
5	6.26	Wire rope on left side loose (retightened).	Bucket moved 3/8 inch longitudinally.
6	8.43		

Figure 2.3-18. Loader —
rail transportability rest results.



TEST 1,2,3 ◄ DIRECTION OF TRAVEL ► TEST 4,5,6

Test No.	Impact Speed (mi/h)	Results	
		Power Module	Work Module
1	4.45		
2	6.17		Chains loose (retightened).
3	8.29		Chains elongated 2 links (retightened).
4	4.34		
5	6.04	Chains loose (retightened).	
6	8.17	Left side chain broken. Side wheel block sheared off.	

Figure 2.3-19. Scraper — rail transportability test results.

c. Minimal disassembly (i.e., removal of ROPS, fabric cab and mirror supporting structure, and windshield) and the installation of a steering link were required to prepare the vehicles for rail shipment.

2.3.2 Highway Transportability

2.3.2.1 Objective

To determine whether the test item can be transported over highways (TOP 1-2-500).

2.3.2.2 Criteria

FAMECE must be designed to permit worldwide movement by highway, rail, ocean, amphibious, and inland-waterway carriers with no/or a minimum of disassembly of equipment [MN (ED) (QMR), para 9.a(15), essential].

2.3.2.3 Method

Rather than simulating highway test conditions, existing data accumulated from highway movement between the contractor's plant and various test sites were used to determine compliance with the criteria. The PQT highway transportability test plan which referenced portions of TOP 1-2-500 was followed.

Thirteen FAMECE vehicles (power section with work section) and one work section alone were prepared for shipment at the contractor's plant (Benton Harbor, Michigan). The items were loaded on semitrailers and tied down with chains and binders as shown on the vehicle transportation data plates and/or in accordance with commercial and military practice. Figures 2.3-20 through 2.3-28 show the tiedown and blocking arrangements used. In normal preparation for shipment and to reduce height, the ROPS was removed, the fabric cab and tubular cab support stowed in the ROPS, and the windshield removed and secured to the engine hood. The steering link was installed to prevent articulation of the frame and, in the case of the dumper, the headache board was lowered into the dumper body. All load measurements and weights were recorded as shown in Table 2.3-1.

All vehicles were then transported on highways to MERADCOM (Fort Belvoir, Virginia) and later to Fort Bragg, North Carolina, for OT. In addition, several of the vehicles were transported to and from NARADCOM (Natick, Massachusetts). Interstate routes were followed primarily with remaining travel over at least surfaced roads within state

boundaries. The conditions permitted evaluation of turning characteristics, handling, and stopping ability of the transport with load. Instrumentation for measuring force levels was not installed since force levels created during the rail transportability test exceeded what would be encountered under highway emergency stopping conditions. On arrival at MERADCOM, all vehicles, blocking (when used), and tiedowns were inspected for evidence of load displacement and damage.

A limited number of recovery and towing operations were done as a result of disabling test accidents. Figures 2.3-29 and 2.3-30 illustrate such an incident. In this case, the dumper power section was being towed to the maintenance as a result of a damaged radiator. The operator's manual was consulted for appropriate towing procedures.

2.3.2.4 Results

Each FAMECE vehicle was shipped at least 941 miles (as shown in Table 2.3-2) by truck-semitrailer transport. The cumulative shipping distance was 18,656 miles over various roads and highway conditions. Inspection of the vehicles at MERADCOM revealed no apparent damage resulting from transport. Furthermore, 5,000 hours of subsequent PQ testing revealed no damage that might have been related.

Since the overall shipping width of each vehicle (103 to 105 inches) exceeded the limits of all states except Hawaii (see TOP 1-2-500, Table 5, page C-3), it was necessary to obtain permits restricting travel to specific times and road conditions. FAMECE vehicle weight or weight distribution was not a limiting factor. FAMECE technical manuals did not provide instructions for highway movement.

2.3.2.5 Analysis

The dumper vehicle was typical of several recovery operations which occurred during the test. Procedures described in the manual were followed and the vehicles could be towed without problem using the standard military heavy-duty towbar, air, and electrical interconnections to the towing vehicle. Operators noted that it was difficult to back up a towed FAMECE vehicle because of the towed vehicle's articulated steering freedom.

Results of inspections and post-transport operations indicated that highway transport under a variety of climatic and highway conditions did not measurably degrade the performance of the FAMECE test vehicles. Because of poor soil

conditions, FAMECE vehicles were not transported by semi-trailer over cross-country terrain as specified by the DTP.

The vehicle designs permitted reduction of height to within acceptable statutory limits and with a minimum of disassembly of equipment. Vehicle weights (gross) would not generally restrict highway transportability except when the vehicles carry loads. Available military and commercial truck-trailer combinations could handle all vehicles with regard to weight. Other design considerations, however, created a nonreducible vehicle width that exceeded limitations in all states through which the vehicles were actually transported. Further vehicle width reduction is not feasible at this time. A check of TOP 1-2-500 (Table 5.6 and Figure 6, Appendix C) shows that FAMECE exceeds vehicle width limits in all states (except Hawaii) and foreign countries. The effect of this condition is restricted freedom of road movement depending on local conditions. In this respect, the criteria are not met.

2.3.3 Marine Transportability

2.3.3.1 Objective

To determine whether the FAMECE can be transported by marine vessels.

2.3.3.2 Criteria

It is essential that the FAMECE:

a. Be designed to permit worldwide movement by ocean carriers with no/or a minimum of disassembly of equipment [MN (ED)(QMR), paragraph 9.a.(15)].

b. Be provided with lifting and tiedown devices for water shipment of individual sections as well as entire vehicles as required by MIL-STD-209B and AR 70-39 [MN (ED)(QMR), paragraph 10.g.].

2.3.3.3 Method

The PQT-G Test Plan specifies that the procedure given in the TOP 1-2-500 (7 Feb 73), Section II, paragraph 8.c.(1) be followed:

> The test item is properly prepared for marine transport as prescribed in the appropriate technical manuals. To simulate dockside loading, the test item is lifted

> off the ground by a mobile crane (or other suitable lifting device) to a height simulating ship deck height (up to 40 feet) and held for a period of 3 minutes . . . . The load is rotated 90° to the extreme left, reversed 180° to the right, and reversed again 90° left to the original starting position. The test item is then lowered to within 4 inches of the ground and released to free fall the remainder of the distance to the ground. Once this has been accomplished, the test item is inspected for damage . . . .

2.3.3.4 Results

This subtest was not conducted in the prescribed manner since PQT-G was terminated. However, information acquired from other subtests related to loading and transportability was analyzed.

2.3.3.5 Analysis

Although not recorded as part of the rail impact test, each FAMECE, in its shipping configuration, was lifted, rotated, and placed on and removed from the rail car essentially in the manner described in the test plan for marine transportability. Two characteristics of the test item were measured:

a. Strength capacity of the lifting attachments.

b. Sling clearance.

No failures of lift attachments or problems with sling clearances were observed during the rail impact test. Subsequent endurance testing of each vehicle subjected to the rail impact test indicated no apparent related failures.

The FAMECE with lifting attachments, therefore, has successfully withstood forces similar to those that would have occurred during a formal test of marine transportability. Furthermore, it is believed that air transportability testing, including airdrop/helicopter lift duty cycle, is more rigorous than marine transportability testing with respect to the 4-inch free fall therefore demonstrating the ability of the test item to withstand both the shock and racking forces associated with the lifting and rotation and a 4-inch free fall. It is felt that successful completion of the air transportability testing would satisfy all marine transportability requirements.

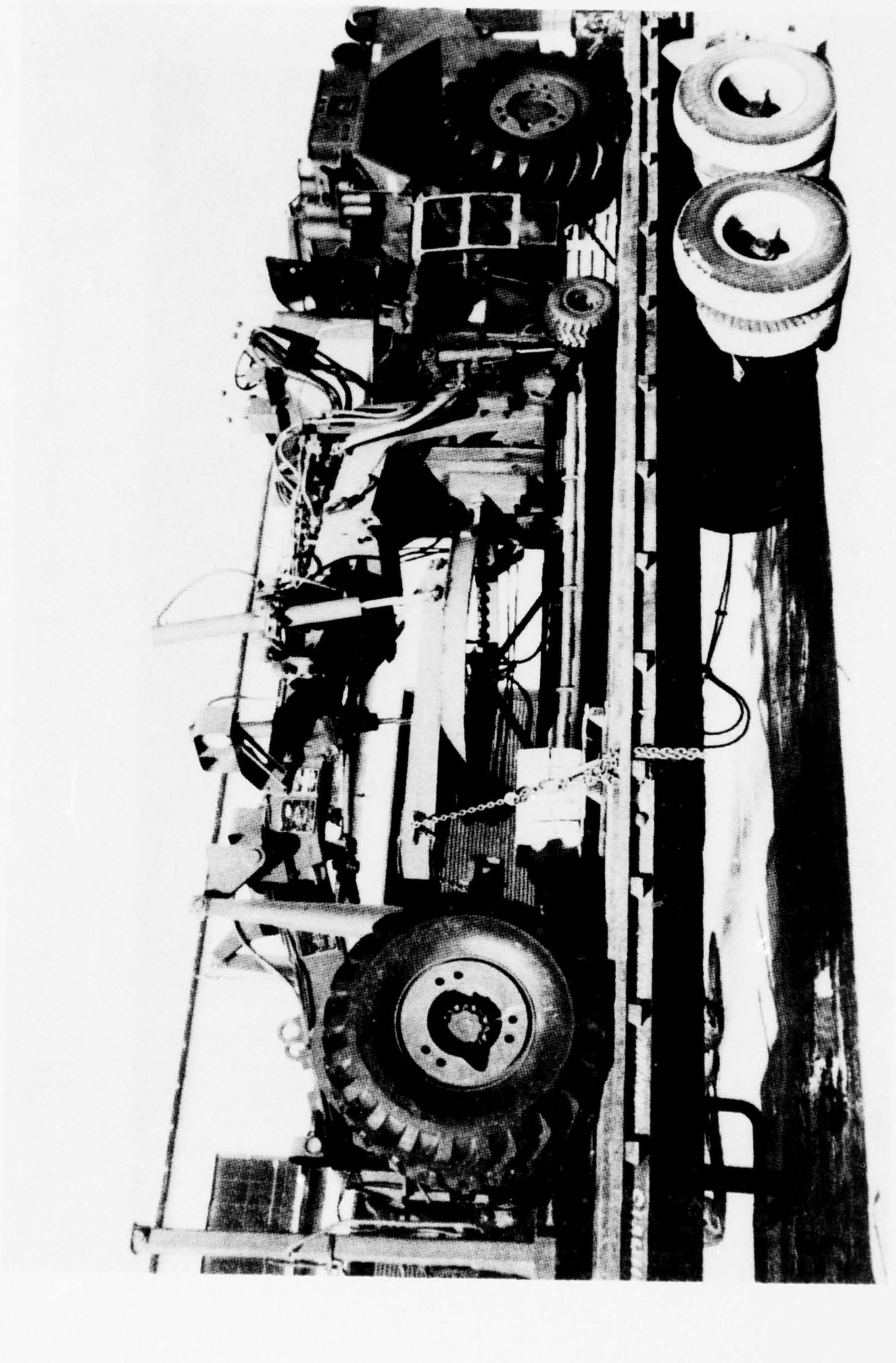


Figure 2.3-20. Grader.

Figure 2.3-21. Grader — tiedown through power section pintle.

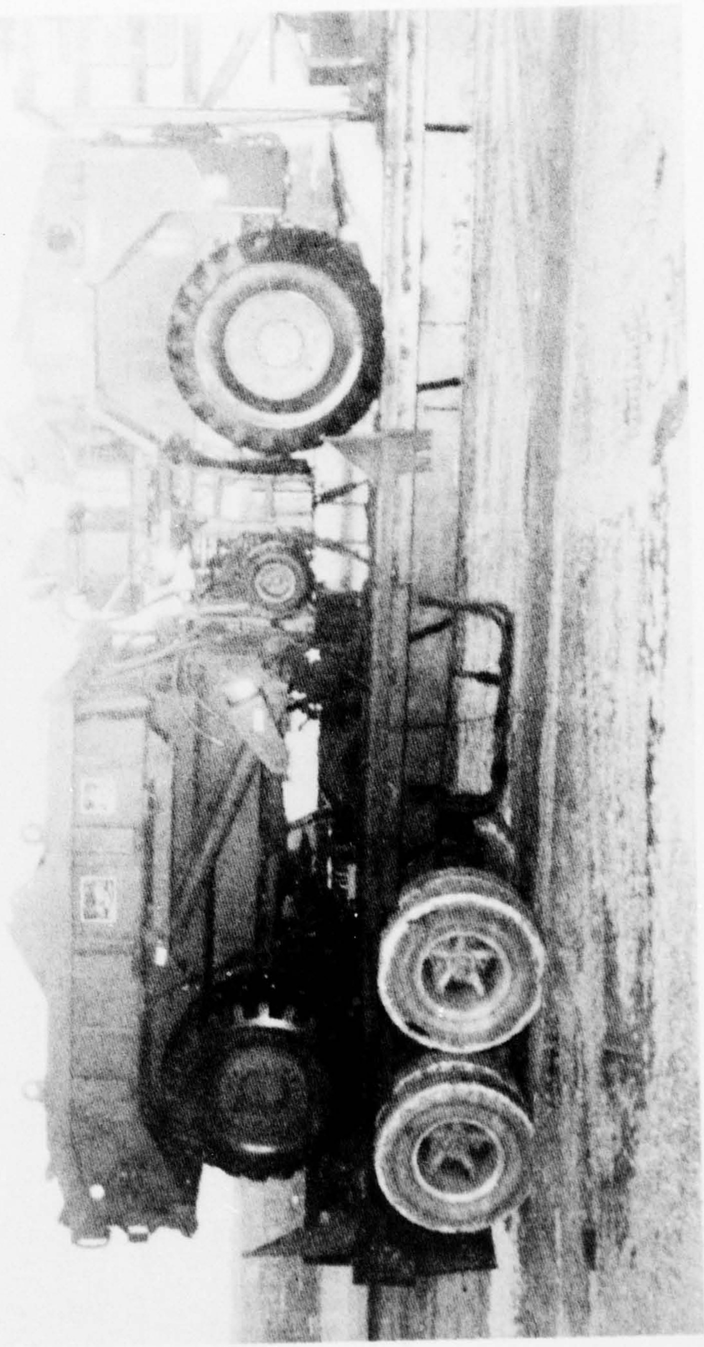


Figure 2.3-22. Dumper.

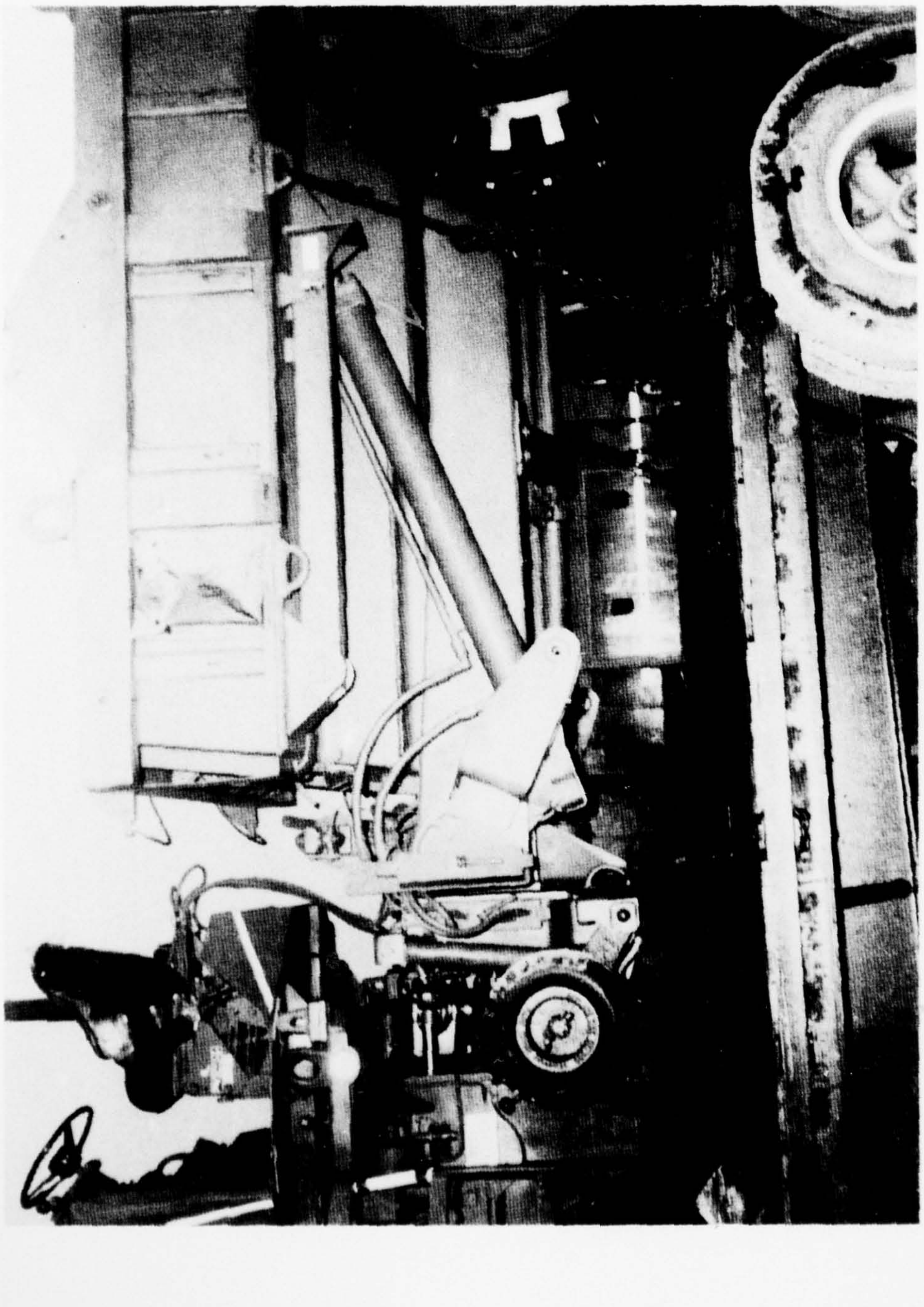


Figure 2.3-23. Dumper — tiedown of power section and work section.

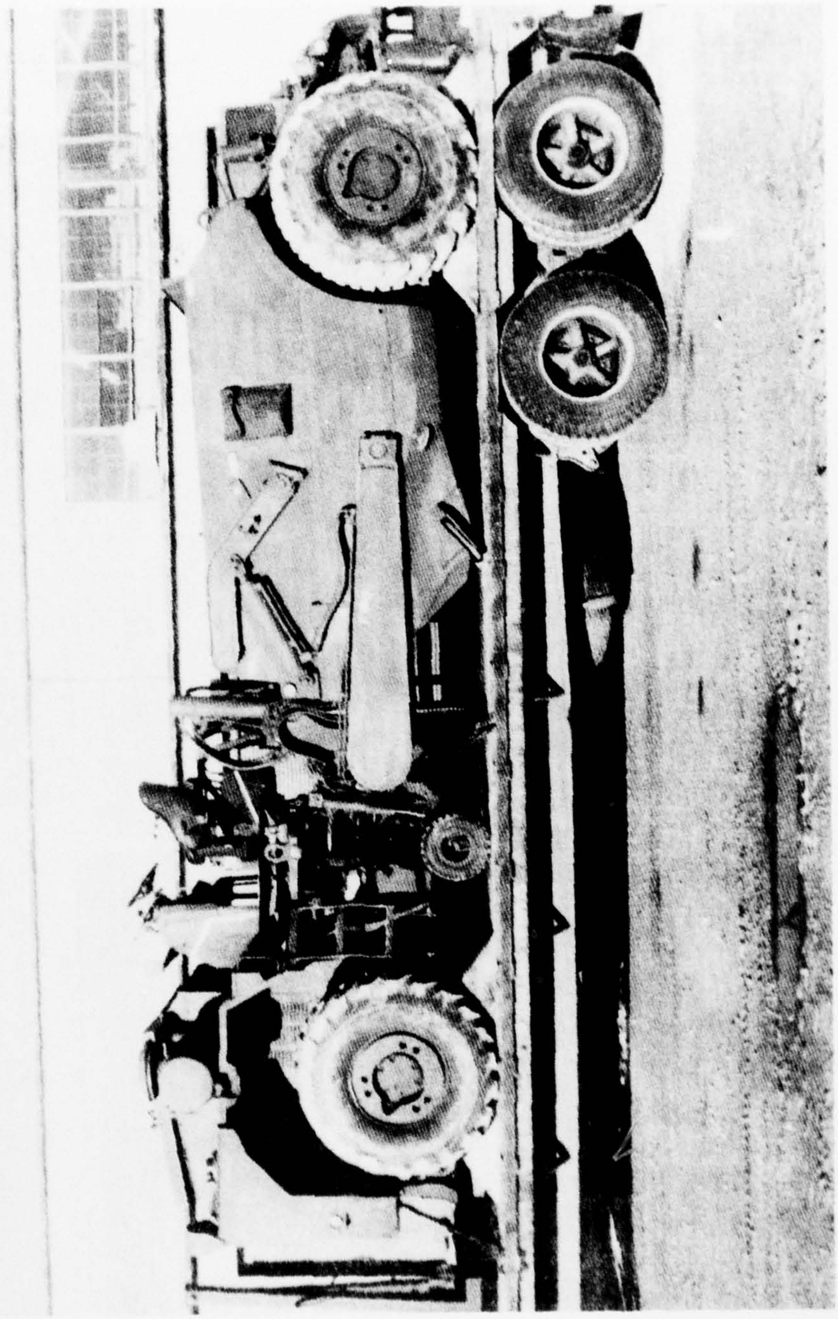


Figure 2.3-24. Scraper.

Figure 2.3-25. Scraper — work section rear tiedown.

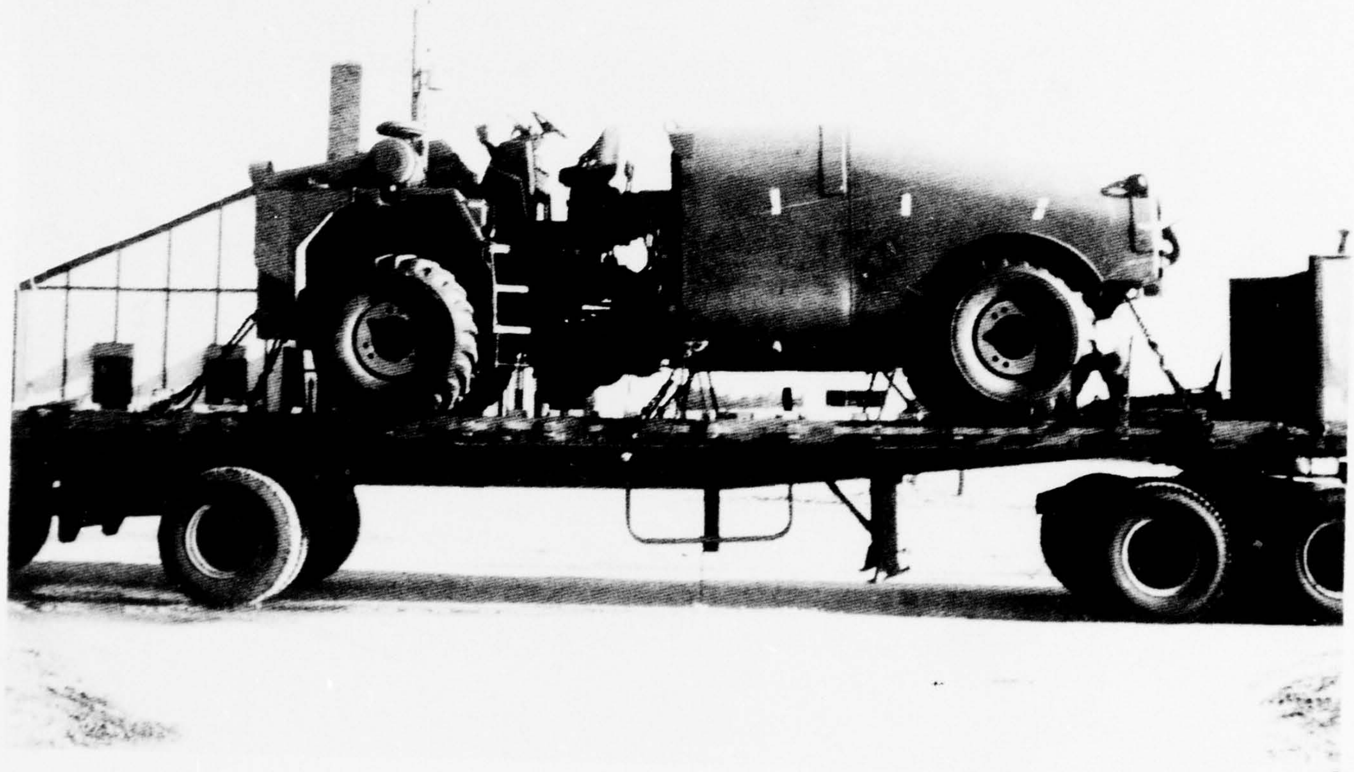


Figure 2.3-26. Distributor.

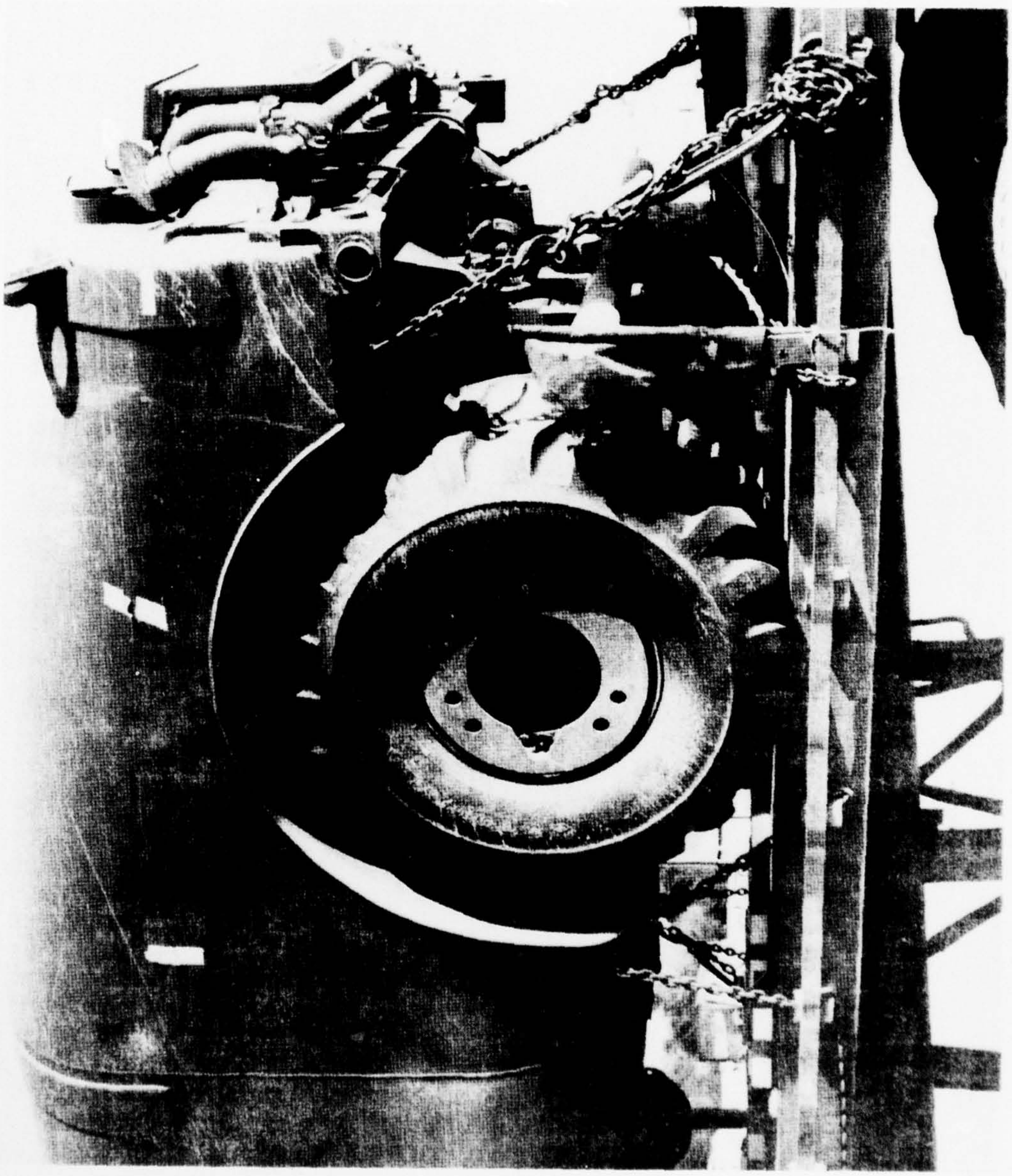


Figure 2.3-27. Distributor — work section rear tiedown.

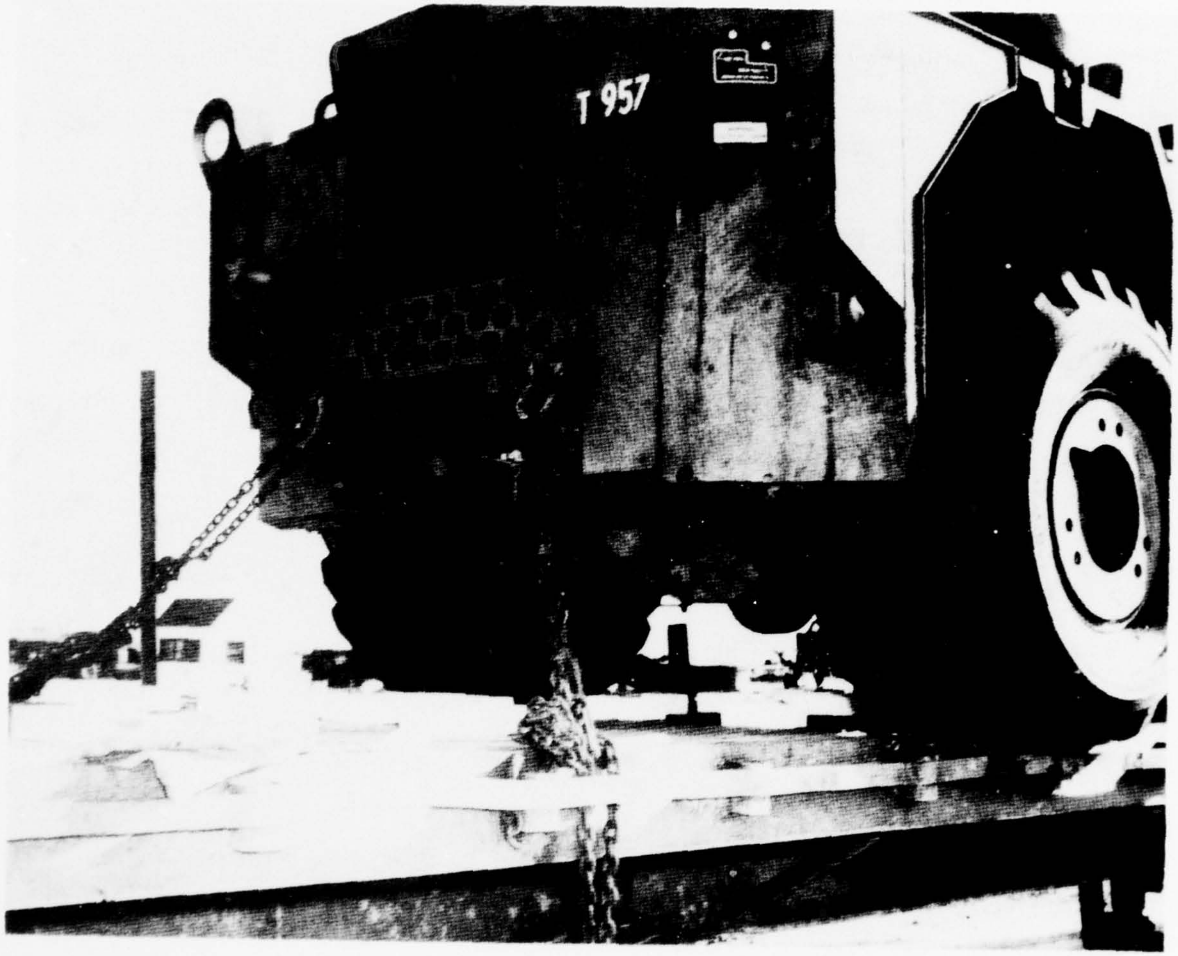


Figure 2.3-28. Distributor — power section front tiedown.

Figure 2.3-29. Dumper — recovery and towing operation, front view.

Figure 2.3-30. Dumper — recovery and towing operation, rear view.

Table 2.3-1. FAMECE Vehicle Data — Highway Transport

Vehicle	Gross Vehicle Weight* (Unloaded) (lb)	Gross Vehicle Weight* (Loaded) (lb)	Vehicle Height (Reduced) (in.)	Vehicle Length (in.)	Vehicle Width (in.)
Power Section/Dozer	—	—	97	258	105
Power Section/Loader	30,860	38,360	97	262	105
Power Section/Grader	30,700	30,700	98	309	104
Power Section/Scraper	31,140	61,140	97	—	105
Power Section/Dumper	29,980	50,980	97	—	103
Power Section/T.F. Compactor	30,960	30,960	97	—	105
Power Section/S.D. Compactor	—	—	97	274	105
Power Section/Distributor	29,100	49,850	97	286	103

*Includes ROPS and cab frame; weight included fuel remaining in tank on arrival. No significant amount of soil was on vehicles.

Table 2.3-2. Highway Transport Record

Work Section	Serial No.	Power Section	Serial No.	Highway Travel Route (Mi.): Benton Harbor, MI Ft. Belvoir, VA Natick, MA	Benton Harbor, MI Ft. Belvoir, VA	Ft. Belvoir, VA Natick, MA	Ft. Belvoir, VA Fort Bragg, NC	Total Vehicle Mileage
Dozer (T946)	466X102	T945	466X109	910	**	493	307	1,710
Dozer (T944)	466X101	T943	466X107	*	634	*	307	941
Scraper (T956)	464X102	T955	466X114	*	634	*	307	941
Scraper	464X101	*	*	910	**	493	307	1,710
Distributor (T938)	468X101	T941	466X106	*	634	493/493	307	1,927
Distributor (T958)	468X102	T957	466X115	*	634	*	307	941
T.F. Compactor (T952)	469X101	T951	466X110	*	634	493/493	307	1,927
S.D. Compactor (T954)	470X101	T953	466X112	*	634	493/493	307	1,927
Grader (T940)	471X101	T949	466X104	*	634	493/493	307	1,927
Grader (T950)	471X102	T959	466X116	*	634	*	307	941
Loader (T966)	465X102	T937	466X105	*	634**	*	307	941
Dumper (T936)	467X102	T935	466X108	*	634	*	307	941
Dumper (T942)	467X103	T941	466X106	*	634	*	307	941
Dumper (T960)	467X104	T959	466X113	*	634	*	307	941
								18,656

* Not routed to this location.
** Transported without power section.

2.4 PROTOTYPE QUALIFICATION TEST-CONTRACTOR (PQT-C)

2.4.1 Objective

The objective of contractor testing (PQT-C) was to evaluate the dozer, scraper, and grader by operating each vehicle for 400 hours. This testing was done concurrent with PQ testing at MERADCOM and is provided only as a summary without analysis.

2.4.2 Criteria

FAMECE was to meet all criteria specified in the test plan contained in Contract DAAE07-75-C-0051. The test plan was extracted from the PQT detail Test Plan dated 25 October 1977 which was prepared by MERADCOM.

2.4.3 Method

Each of the three vehicles was operated in accordance with the following mission profile:

Dozer

Dozing	54%
Dozer winch operations	9%
Pushloading	29%
Travel and miscellaneous	8%

Scraper

Pushloading	26%
Self-loading	64%
Travel and miscellaneous	10%

Grader

Road maintenance	40%
Sloping operations	35%
Spreading/leveling operations	15%
Travel and miscellaneous	10%

Both the dozer and scraper were tested to determine productivity (rate of moving soil). The dozer was used to construct a trench 3 feet deep, and the scraper removed soil to form a 110-foot-wide ditch.

A maintainability evaluation was performed on each vehicle whereby data resulting from any maintenance tasks were

recorded and analyzed, maintainability values were calculated, and a qualitative analysis was performed to determine general vehicle maintainability.

Data collected during testing of each vehicle were used to calculate MTBF and point estimates of reliability on both a system- and mission-failure basis.

Total consumption of fuel and fluids by each vehicle was determined and the data projected to a 10-hour work mission.

A human factors/safety evaluation was made of information related to operators' opinions of various vehicle characteristics.

Overall noise exposure was determined by recording sound levels with a dosimeter during various operations.

Total hours of operation were measured for the vehicles and a final inspection was performed at the conclusion of PQT-C.

2.4.4 Results (CEC Report PQT-C 502)

The mission profiles for the dozer and scraper were altered slightly to accommodate overall testing and conditions of the test area. Freezing conditions occurred during approximately one-half of the PQT-C testing. The report indicated the following results:

a. Productivity for the dozer and scraper tested was considered satisfactory.

b. No major maintainability-related problems were identified during PQT-C; however, some minor problems or undesirable conditions were noted.

c. Calculated MTBFs and vehicle reliability are shown in Table 2.4-1.

d. Based on survey responses, the human factors/safety evaluation revealed no critical areas of concern. Military operators were used during PQT-C.

e. Noise levels reached during operation, fuel and fluids consumption, and other test measurements appear in Table 2.4-2.

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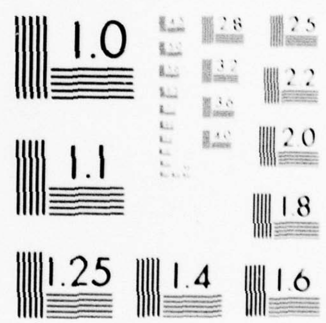

MICROCOPY RESOLUTION TEST CHART

NATIONAL BUREAU OF STANDARDS-1963-A

Table 2.4-1. MTBF/Reliability as Demonstrated — PQT-C (from CEC Report No. PQT-C 502)

Test Item		Failures		MTBF		Reliability	
		System	Mission	System	Mission	System	Mission
Dozer	PS	10	1.00	40.4	400.0	77.9	97.5
	WS	4	2.75	100.0	145.5	90.5	93.4
	Veh	14	3.75	28.5	106.7	70.5	91.1
Scraper	PS	8	0	50.0		81.9	100.0
	WS	15	2	26.7	200.0	68.8	95.1
	Veh	23	2	17.4	200.0	56.3	95.1
Grader	PS	4	0	100.0		90.5	100.0
	WS	7	6	57.1	66.7	83.9	86.1
	Veh	11	6	36.4	66.7	76.0	86.1
Overall	PS	22	1	54.5	1200.0	83.2	99.2
	WS	26	10.75	46.2	111.6	80.5	91.4
	Veh	48	11.75	25.0	102.1	67.0	90.7

PS = Power Section
WS = Work Section
Veh = Vehicle

Table 2.4-2. PQT-C Test Data

Vehicle	PQT-C Hours	Incidents Reported (FFR's)	Fuel Consumption Test Average (gal/h)	Total Added During 10-Hour Service (gal) Engine Oil	Hydraulic Oil	Trans. Fluid	Coolant	Maximum Noise Exposure Level (dBA)
Dozer 446X102 with PS 446X109	400	39	4.82*	3.0	7	13.5	.50	96
Scraper 446X101 with PS 446X111	400	29	6.33**	10.5	22	8.0	3.75	98
Grader 471X102 with PS 446X116	400	22	4.82***	7.0	31	6.5	0	100

* Based on 396.8 hours of testing.

** Based on 398.6 hours of testing.

*** Based on 388.5 hours of testing.

2.5 ENDURANCE (PQT-G) TESTING

FAMECE was tested according to the mission profile given in Appendix II of the Detail Test Plan (DTP) and individual test plans of Appendices III through X of the DTP. All the data for safety, human factors, maintenance, reliability, and durability were generated during this test. Planned productivity checks could not be made because adverse weather and the resulting soil conditions prevented collection of reliable information. The endurance test phase of PQT-G simulated the FAMECE mission profile during repetitive test cycles designed for the specific work section being tested; however, delivery of the test items, availablility of the items for test, and climatic conditions limited test hours actually attained. The tests were conducted in 100-hour cycles until suspended on 17 March 1978 in order to prepare the FAMECE for OT.

2.5.1 Objectives

a. To determine the ability of the FAMECE to travel over designated road and cross-country test courses for a prescribed distance or time and perform the typical work functions required.

b. To obtain data suitable for application to other subtests--reliability, maintenance evaluation, safety, and human factors analysis.

2.5.2 Criteria

(From Appendix 2, Items 2, 3, 4, and 7, of the Detail Test Plan.)

a. A typical mission profile for each member of the family will be composed of the following construction tasks in the percentages indicated below:

Dozer

Earthmoving (dozing)	60%
Stockpiling	15%
Pushloading	5%
Towing	5%
Travel	10%
Miscellaneous	5%

Loader

Earthmoving (loading)	65%
Stockpiling	20%
Travel	10%
Miscellaneous	5%

Scraper

Earthmoving (scraping)	80%
Hauling (construction materials)	5%
Travel	10%
Miscellaneous	5%

Dumper

Earthmoving (hauling)	50%
Hauling (construction materials & general cargo)	30%
Towing	5%
Travel (to include transporting squad personnel & tools)	15%

Grader

Road maintenance	50%
Spreading & leveling fill	20%
Ditching	10%
Travel	10%
Miscellaneous	10%

Compactors

Embankment compaction	30%
Base course compaction	30%
Vibratory mode compaction	20%
Asphalt compaction	10%
Travel	10%

Distributor

Distributing water	55%
Hauling water	35%
Travel	10%

b. (Essential) Must operate utilizing standard Army fuels and lubricants.

c. (Essential) Must have sufficient fuel capacity for at least 200 miles of travel on secondary roads or 10 hours of operation as a work tool.

d. (Essential) The power module and work module will be capable of being coupled or uncoupled at the work site within 30 minutes (15 minutes is desirable) without the need for special tools or equipment.

2.5.3 Method

Detailed test plans for each of the work sections are contained in Appendices III through X of the DTP. The endurance of PQ test, as part of DT II, is perceived as a means of demonstrating and validating the various criteria of the MN; however, the emphasis of the test was to demonstrate the reliability and maintainability characteristics of the FAMECE system. The detailed tests were designed using proven SAE and Army procurement specification test procedures applicable to the functional work section being tested. Throughout the endurance test, the test items were serviced and maintained in accordance with the appropriate lubrication charts and TM's provided with the equipment. A record of incidents, malfunctions, and maintenance actions was logged and photographs were made of the more significant problems. During the tests, engine hourmeter readings were recorded. The lights and electrical circuits were checked during pre- and post-operational inspections. Only standard military lubricants and fuel, procured to Federal specifications, were used during the endurance test. The fuel used and oil added during operation were recorded. Road speeds were held to reasonable and practical speeds for the course conditions. The test items were examined visually at the start of, during, and at the end of the shift of operation to determine excessive wear, damage, failures, or impending failure. Coupling/uncoupling operations were performed in the field as required during maintenance and to investigate related incidents.

2.5.4 Results

Test results for FAMECE test items follow:

2.5.4.1 Operating Time--Engine Hourmeter and Clock Hours

Engine hourmeter readings were recorded when the test items were received for PQT-G at MERADCOM and throughout the test. After PQT-G, hourmeter readings were recorded and the number of test hours or clock hours completed (the difference in readings) calculated for each item. The data appear in Table 1-1, FAMECE Test Data.

2.5.4.2 Fuel Consumption

The total amount of fuel consumed, the average rate of consumption for the respective mission profile, and significant problems observed for each vehicle during testing are shown in Table 2.5-1. All test items satisfied the MN requirement that there be sufficient fuel capacity for 10 hours of operation as a work tool.

2.5.4.3 Oil Consumption

The engine oil and lubricant consumption observed for each test item are shown in Table 2.5-2.

2.5.4.4 Coupling/Uncoupling Time, Minutes

Coupling and uncoupling times were obtained from two sources: 50-hour service records and special coupling/uncoupling test records.

The service record summary covering the period from August 1977 to March 1978, in Table 2.5-3, contains times for vehicles checked. The average operation (coupling or uncoupling) times exceeded the allowable 30 minutes for the dumper and distributor, and individual operation times exceeded 30 minutes 22 percent of the time. The majority of the uncoupling/coupling operations were performed in an unheated shop. Due to the wet or freezing weather during this time, it was necessary to thaw the coupling with water to remove frozen mud prior to uncoupling.

The special coupling/uncoupling tests were conducted on six vehicles during 23 February to 8 March 1978 in a gravel parking lot in temperatures from 18 to 45°F. Operators were experienced and trained, had performed the operations before, and were equally skilled. The time records summarized in Table 2.5-3 show the average times for five of the eight vehicles were under 30 minutes.

Table 2.5-4 compares operation times from the service records with the test times.

Table 2.5-1. FAMECE Fuel Consumption

Test Item	Reference No. Power Section	Reference No. Work Section	Total Engine Hours	Total Fuel Consumed (Gal)	Consumption (Gal/Hr)
Compactor (SD) See Note 2	T953	T954	256.6	938.0	3.65
Compactor (TF)	T951	T952	283.3	1160.0	4.09
Distributor	T941	T938	466.0	4159.7	8.92
Distributor	T957	T958	227.8	897.7	3.94
Dozer	T943	T944	738.0	2552.0	3.46
Dumper	T935	T936	1012.5	3814.0	3.76
Dumper	T959	T960	355.4	1755.0	4.94
Dumper	T935	T942	204.5	786.5	3.84
Grader	T939	T940	771.8	2920.0	3.78
Grader	T949	T950	91.9	490.0	5.33
Loader	T937	T966	935.8	3355.4	3.58
Scraper	T955	T966	216.2	1046.0	4.84

Notes:

1. Fuel tank capacity — 70 gallons.
2. Tested in pneumatic mode only over gravel test course.

Table 2.5-2. Oil and Other Lubricant Consumption

Test Item	Reference No.		Consumption (Gal)			Other		Notes
	Power Section	Work Section	Engine Oil	Trans Oil	Hyd Oil	Type	Qty	
Compactor (SD)	T953	T954	12.00	0.50	2.25			
Compactor (TF)	T951	T952	15.50	2.50	12.00			
Distributor	T941	T938	36.00	39.00	21.75			
Distributor	T957	T958	4.25	13.00	23.50	60-90	2 Gal	Replaced differential seal.
Dozer	T943	T944	31.75	28.25	5.50			
Dumper	T935	T936	33.75	23.00	51.00			
Dumper	T959	T960	12.50	4.00	26.50			
Dumper	T935	T942	12.50	2.00	1.00			
Grader	T939	T940	45.75	7.50	41.00	60-90	2.5 Gal	Added to right wheel Power Section.
							1.0 Pt	Added to differential.
Grader	T949	T950	17.00	0	7.00	60-90	11.0 Qt 1.0 Pt	Brake fluid — brakes repaired/adjusted.
Loader	T937	T966	38.50	5.09	13.25		4.0 Oz	Brake fluid
Scraper	T955	T956	10.00	1.00	34.00	60-90	2.0 Gal	Added to front differential.

Note: Engine oil changed every 250 engine hours.

Table 2.5-3. Coupling/Uncoupling Times;
Service Period August 1977 to March 1978
(from 50-Hour Service Records)

Vehicle	Date	Time (Min) Couple	Time (Min) Uncouple	Uncouple or Couple Operation Average (Min)
S.D. Compactor T954	12/15/77	8	12	15.5
Power Section T953	1/09/78	24	18	
Scraper T956	12/08/77	36	67*	
Power Section T955	12/14/77	8	15	
	12/21/78	15	15	19.75
	1/30/78	12	20	
	3/13/78	12	12	
	3/20/78	10	15	
Dozer T944	10/13/77	N/A	12	
Power Section T943	10/25/77	N/A	12	
	11/03/77	18	24	
	11/14/77	N/A	12	1[illegible]7
	11/15/77	N/A	12	
	12/02/77	N/A	20	
Distributor T938	10/21/77	N/A	23	
Power Section T941	11/01/77	N/A	18	
	11/14/77	30	75	
	11/22/77	N/A	30	33.7
	12/02/77	N/A	16	
	12/15/77	N/A	16	
	12/21/77	40	55	
Loader T966	9/26/77	18	24	
Power Section T937	10/18/77	20	20	
	11/05/77	36	42	
	11/10/77	N/A	18	
	11/22/77	42	24	24.6
	12/16/77	N/A	26	
	1/10/78	15	20	
	1/25/78	25	15	
T.F. Compactor T952	12/07/77	6	6	
Power Section T951	12/15/77	25	15	15.3
	1/09/78	N/A	28	
	1/25/78	10	17	

Table 2.5-3. (Continued)

Vehicle	Date	Time (Min) Couple	Time (Min) Uncouple	Uncouple or Couple Operation Average (Min)
Dumper T936	8/19/77	18	14	
Power Section T935	8/25/77	90 Total		
	9/13/77	60 Total		
	9/23/77	N/A	20	
	10/12/77	20	45	
	10/17/77	39	53	34.5
	10/22/77	15	50	
	11/05/77	18	36	
	11/19/77	12	30	
	11/29/77	15	50	
	1/16/78	40	105	
	1/18/78	N/A	30	
Grader T950	2/24/78	6	6	
Power Section T959	2/28/78	240**	15	22.5 (excluding 2/28/78)
	3/01/78	4	4	
	3/04/78	30	30	
	3/07/78	5	5	

*Coupler frozen; time required to chip frozen mud.

**Lock rim pressures not within specifications; time included diagnosis and delivery of tools. This time was disregarded in the calculation of the total operation average for the Grader T950.

Table 2.5-4. Comparison of Operation Times

Type	Results of 50-Hour Service Record Time (min)	Results of 28 Feb to 8 Mar Coupling/ Uncoupling Test* Time (min)
Mean	29.9	10.3
Median	25.0	10.0
Standard Deviation		6.1
Low Time	4.0	2.0
High Time	105.0	30.0
Most Frequent	15.0	10.0
Range	101.0	28.0

* High Time (240 minutes) was not used since time was required for diagnosis and delivery of tools.

A record and test analysis revealed that operation times are lower when the operation frequency is higher. When the operation is not performed frequently (e.g., for 50 operating hours), dirt tends to accumulate in the mechanism, and the locking ring seats preventing the cylinder from moving the mechanism.

It is recommended that the vehicles be coupled and uncoupled periodically and the mechanisms cleaned.

2.5.4.5 Other Observations Recorded

In accordance with the PQT-G Detail Test Plan, paragraph 2.5.5 a. through e., other characteristics were observed and results recorded as follows:

a. Mobility - speed runs (Table 2.5-5).

b. Night operations (Table 2.5-6).

c. Shallow-water fording (Table 2.5-7).

2.5.5 Analysis

Because DT II was suspended early, only five vehicles had accumulated enough operating hours for an adequate evaluation of fuel and lubricants. Selected test items, however, were subjected to laboratory testing of fuels and lubricants, engine inspection, and lubricant analysis. The procedures indicated that the oil added at Clark Equipment Company was

not to specification (MIL-L-2104B). Operators experienced cold starting problems and a wear metal analysis indicated ". . . accelerated wear of main bearings in power modules . . ."

For detail analysis, see Appendix B to this report.

Table 2.5-5. Mobility — Speed Runs

Test Item	Loaded/ Empty (L/E)	Measured Distance	Test Runs	Average 2-Way Speed (mi/h) Gear 1	Gear 2	Gear 3	Gear 4	Lockup 3	Lockup 4	Notes
Distributor	E	88 Ft	*	4.85	9.95	18.85	27.09	21.43	31.58	Steering response rough and jerky on all surfaces. Can maintain convoy speed of 30 mi/h.
	L	88 Ft	*	4.65	9.45	18.00	25.91	21.43	31.32	
Dozer	L	88 Ft	*	4.62	9.66	18.64	27.17	21.34	32.17	Can maintain convoy speed of 30 mi/h.
Dumper	L	88 Ft	*	4.44	9.09	16.89	23.68	19.87	28.81	Gross weight 51,906 lb.
	L	88 Ft	*	4.52	9.26	17.14	25.14	21.02	30.87	Gross weight 52,600 lb.
	L	88 Ft	*	4.62	9.68	-	26.61	21.56	30.76	Can maintain convoy speed of 30 mi/h.
Grader		88 Ft	*	4.66	9.80	19.16	27.65	21.38	32.26	Can maintain convoy speed of 30 mi/h.
		88 Ft	*	4.61	9.69	18.70	27.11	21.20	31.97	

* Three runs in 2 direction in each gear.

Table 2.5-6. Night Operations — Adequacy of Illumination for Travel and Work

Test Item	Adequate Illumination		Problem Encountered
	Travel	Work	
Compactor (SD)	—	—	No known problems. (Total hours of night operations insufficient for conclusion.)
Compactor (TF)	—	—	No known problems. (Total hours of night operations isnufficient for conclusion.)
Distributor	#	#	
Dozer	#	#	Dozer blade reflectors knocked off in work operations. Light guards bent.
Dumper	#	X	Reflection from dumper rock guard blocks operator's vision.
Grader	#	X	Lighting inadequate at end of moldboard. Front lights on work section beamed too high for viewing close work.
Loader	#	#	
Scraper	—	—	No known problems. (Total hours of night operations insufficient for definite conclusions.)

Legend: # Adequate
X Inadequate
— Not determined

Table 2.5-7. Shallow Water Fording Test

Test Item	Shallow Water Fording Ability (Poor, Good, Excellent)	Problems Encountered
Compactor (SD)	Not tested	
Compactor (TF)	Not tested	
Distributor	Not tested	
Dozer	—	
Dumper	Good	When fording water deeper than 18 inches, water entered breather and then entered axle differential. Brakes degraded after several fordings, until dried out by repeated brake application.
Grader	Not tested	
Loader	Good	When fording water deeper than 18 inches, water entered breather and then entered axle differential.
Scraper	Not tested	

2.6 SAFETY ANALYSIS

2.6.1 Introduction

The majority of the safety related data was collected during the contractor's RDAT and EDT. The contractor's safety statement data were reviewed for omissions and were supplemented during the PQT by test and inspection findings. All incidents (EPRs) were reviewed and summarized in the operational test safety release sent to TECOM prior to start of OT.

2.6.2 Objectives

a. To determine if there are hazards to personnel during operation, maintenance, storage, or transportation of the test item.

b. To ensure that the optimum degree of safety consistent with the military operational requirement is designed into the materiel and equipment (AR 385-16).

c. To ensure that adequate controls over identified hazards are established in order to protect personnel, equipment, and property (AR 385-16).

d. To ensure that the principles and intent of system safety as outlined in MIL-STD-882A were implemented during the FAMECE Full-Scale Development Phase to obtain the optimum degree of safety within the constraints of operational effectiveness, time, and cost and are attained through the specific application of system safety management and engineering principles.

2.6.3 Criteria

The family of equipment will be designed in accordance with safety engineering principles in order to provide a maximum degree of safety to operator, maintenance personnel, and equipment during all phases of development, testing, and field utilization (paragraph 12.b of MN). The appropriate safety engineering requirements of AR 385-16 and MIL-STD-882A are applicable.

2.6.4 Method

Data were collected from four sources:

a. Equipment examinations by a safety engineer.
b. Checklist completed by a safety engineer.
    (1) Table 15-3 of DARCOM Pamphlet 706-134.
    (2) Checklist in Appendix XIV of test plan (PQT).

c. Completed operator and maintenance checklists.
d. All EPRs.

TOP/MTP 2-2-508, Safety Evaluation (Automotive), 27 October 1965 was used as a guide for this subtest. During all subtests, the power module, the work modules, and the power-work module configurations were examined to determine the presence of safety hazards. Particular emphasis was focused on the following areas:

e. Security of stowage.
f. Center of gravity.
g. Hazards due to moving parts.
h. Adequacy of vehicle lighting and electrical systems.
i. Adequacy of safety and warning devices and markings and fault location systems.
j. Adequacy of ROPS.
k. Braking characteristics at high and low speed.
l. Stability.
m. Coupling and uncoupling.
n. Toxic fumes (TOP/MTP 2-2-614).
o. Noise levels.

Contractor test data were reviewed.

2.6.5 Results

All data pertaining to safety and collected from the tests and checklists are presented in the following Tables:

Table 2.6-1, "Safety Incidents and Recommended Improvements."

Table 2.6-2, "Results of Safety Evaluation Checklist."

Table 2.6-3, "Safety Checklist."

Table 2.6-4, "Toxic Gas Measurements."

2.6.5.1 Hazard Severity and Hazard Probability

The following definitions from MIL-STD-882A were used for categorizing hazard severity and hazard probability for the FAMECE. These definitions should be used for interpreting the hazard severity and probability numbers listed in Tables 2.6-1, 2.6-2, and 2.6-3.

Hazard Severity:

Category I - Catastrophic. May cause death or system loss.

Category II - Critical. May cause severe injury, severe occupational illness, or major system damage.

Category III - Marginal. May cause minor injury, minor occupational illness, or minor system damage.

Category IV - Negligible. Will not result in injury, occupational illness, or system damage.

Hazard Probability:

Level	Specific Individual Item	Fleet or Inventory
A	Likely to occur frequently.	Experienced continuously.
B	Will occur several times in item's life.	Will occur frequently.
C	Likely to occur some time in item's life.	Will occur several times.
D	So unlikely, assumed not to occur.	Unlikely, but possible.
E	Probability of zero.	So unlikely assumed not to occur.
F	Physically impossible.	Physically impossible.

2.6.6 Analysis

2.6.6.1 General

The method used for the FAMECE safety analysis was to first categorize all safety hazards found, using the data acquisition procedure found in MIL-STD-882A. Once these hazards were categorized, a further breakdown was made to determine the probability of the hazard-producing injury or equipment damage. This combined consideration of the hazard level and probability provides a risk assessment which was used to determine the FAMECE compliance with the specified criteria. The risk assessment is determined through qualitative means when an exact requirement does not exist. For example, the presence and adequacy of the fire extinguisher can easily be checked but the existence of maintenance hazards cannot be checked against a list of exact requirements. Due to the qualitative and subjective nature of the safety analysis, it is probable that some disagreement may exist in assigning both the hazard level and the probability.

In addition, the results of this safety analysis (hazard level and probability) are not the product of a hazard analysis of the FAMECE but are derived from test observations and equipment performance. Not every possible hazard that could occur was considered, but those hazardous conditions arising out of the actual documented use, maintenance, and handling of the FAMECE formed the source of our data.

The determination of major incidents or minor incidents is based on existence of hazards for which protective measures do not exist or are not adequate.

2.6.6.2 Specific Analysis of Test Results

a. Major Incidents (no particular order)

(1) Service Brake Lock (Grader). The grader brake has been a source of problems with adjustment, overheating, and seizing. Both the Project Manager's Office and the manufacturer have addressed the problems, but complete freedom from locking has not been demonstrated.

(2) Accelerator Pedal Sticking in High Idle (Power Section). The configuration of the accelerator pedal permits rocks or dirt to get wedged under the lower edge of the pedal (below the hinge point) preventing the accelerator from returning to idle when pressure is released. The pedal system should be redesigned to prevent this problem.

(3) Fire Extinguisher Location (Power Section). The location of the fire extinguisher causes two problems. First, it is located above the fuel and oil filters which themselves are a potential source of fire. Second, when the Power Section is in a puller mode (Dumper, Distributor, Scraper, Compactors), the extinguisher can be reached only after the operator climbs out of the cab and makes his way to the other side of the equipment. The fire extinguisher should be relocated.

b. Minor Incidents

(1) Hood Support Arm (Power Section). This arm has been redesigned with a stiffener behind the spring mechanism, which still does not adequately support the hood if bumped into. It is probable that the hood could fall during maintenance operations, and it is the safety engineer's opinion that this design feature should be corrected.

(2) Moldboard Clearance (Grader). The moldboard has repeatedly damaged the midmount bearing cover and the hydraulic lines to the grader work section. Although the damage is not usually significant, the clearance problem occurs often. It is the safety engineer's opinion that this design feature should be corrected.

(3) Tailgate Quick-Release Pins (Dumper). These pins broke and fell out of the tailgate, sometimes a result of operator abuse. They were replaced by bolts and nuts with lockwashers which seemed to correct the problem. The pins will require redesign if they are to be used again.

(4) Parking Brakes (Most Work Sections). The parking brakes have failed with broken and sticking mechanisms/cables. The modifications made have not eliminated the problems.

(5) Steering Pump Compensator Adjusting Plug (Power Section). The adjusting plug tends to vibrate out of adjustment with a gradual loss in steering pressure. Although a significant steering loss could eventually occur (Category II hazard), the loss experienced has been gradual and was detected by the operator long before it became a hazard.

(6) Warning Decals (Power Section). Some decals do not adhere to the equipment. Either the decal material or the the adhesive should be changed.

(7) Mirror Brackets (Power Section). The brackets break as a result of vibration and misuse (as a handhold) by personnel. The brackets should be redesigned for greater strength.

(8) Nonadjustable Floodlights (Grader, Dumper). Light reflects off the dumper rock guard, preventing adequate illumination for grader operations. The floodlight brackets should be made adjustable.

(9) Dolly Wheels (Power Section). Occasionally, personnel inadvertently step on the dolly wheel, which turns freely under the weight. A warning label "NO STEP" has been applied to the dolly wheel support arm but it is doubtful that this will be effective. Some means should be found to restrain the wheel.

(10) Stepping Surfaces (Power Section). The area under the fuel and oil filters is used in exiting and entering the cab and is often slippery after maintenance or from leaking filters. Some means should be devised to prevent oil and fuel from draining onto these surfaces.

(11) Hydraulic Lines (Power Section). The main hydraulic lines to the work sections run adjacent to the operator's compartment. The operator could be struck by the hose or hot hydraulic oil should the lines break. Although this condition was not experienced during test, these hoses should be restrained to eliminate any hazard.

(12) Driveshaft (Scraper). A broken driveshaft universal joint could cause the driveshaft to strike the underside of the operator's compartment. (The cab structure partially shields the operator.) This condition did not occur during testing, but a guard over the universal joint would eliminate this potential hazard.

(13) Ladder and Tank Area Around Access Hatch (Distributor). One instance was experienced of slipping on the ladder during wet, muddy test conditions. The area around the access hatch should be coated with nonskid material, and the ladder rungs should be made more slip-resistant.

c. Compliance with Criteria

It is evident that safety engineering principles have been employed in the FAMECE design. Elimination of all safety hazards in equipment of this complexity is difficult. However, the 3 major incidents and 14 minor incidents can and should be corrected. Once they are corrected, and recognizing the inherent limitations in this safety analysis, the criteria would be achieved.

Table 2.6-1. Safety Incidents and Recommended Improvements

Item Component	Incident or Problem	Personnel/ Equipment Impact	Corrective Action Taken	Recommendation	Class of Hazard (MIL-STD-882A) Severity	Probability
1. Dolly wheels	Drifting down.	Damage to dolly wheels.	Globe valves installed (prevent hydraulic fluid from leaking back into system).	Dolly wheel position & valves should be checked periodically during operation to make sure the wheels haven't drifted down. Add caution note in manual.	III	C
2. Dumper tail-gate quick release pin	Loss of pin.	Equipment damage (loss of tail-gate).	Installed bolts & nuts with lockwashers.	Use bolts until rede-signed pins are available.	III	C
3. Hood latch	Does not support hood adequately.	Personnel injury (if struck by falling hood).	Hood support arm latch redesigned (not yet proven effective).	Warn mechanics not to bump support arm during maintenance.	III	B
4. Steering system	Steering pump com-pensator adjusting plug vibrates out of adjustment & causes pressure loss.	Hard steering.	Adjusted steering pressure.	Halt operations and check/ adjust steering pressure at any sign of hard steering. Add locknut.	II	D
5. Steering system	Defective hydrau-lic pressure reducing valve.	Gradual pull, side to side.	Replaced valve.	None - one-time random failure of valve.	III	D
6. Parking brake	Broken cables.	Parking brake would not be operable.	Cable-return spring added (adequacy not yet proven).	Use chock blocks or other means to hold vehicle position if parking brakes are inoperable. Repair parking brake.	III	B
7. Grader service brake	Disc brake on grader has locked.	Personnel injury/ equipment damage. Causes grader to stop suddenly.	Quality assurance problem found with brakes (corrective action not proven).	Maintain additional dis-tance in convoy until brake problem is solved.	II	C

Table 2.6-1. Safety Incidents and Recommended Improvements (Continued)

Item Component	Incident or Problem	Personnel/ Equipment Impact	Corrective Action Taken	Recommendation	Class of Hazard (MIL-STD-882A) Severity	Probability
8. Service brakes	Are degraded after fording.	Brakes would not stop vehicle normally.	Add warning in manual.	Apply several times to dry out immediately after fording.	III	C
9. Steering control valve	Leaking on operator's feet, brake & accelerator pedals.	Personnel injury/ equipment damage (foot could slip off slick pedals causing loss of vehicle control).	Repair kits have been installed in some of the control valves & appear to have corrected problem.	Stop operations and install seal repair kit.	III	D
10. Warning decals	Decals coming off the equipment.	Personnel injury/ equipment damage (personnel not warned of potential hazards).	Replaced decals.	Change material/adhesive.	IV	B
11. Windshield wipers	Inoperable due to defective pressure regulator.	Wipers not available when needed.	Temporary control valve installed on failed units (replacement parts ordered).	Check wiper operation prior to beginning mission.	III	C
12. Grader moldboard (clearance problems)	Front drive disconnect cover damaged & air & hydraulic lines pulled loose. Operator cannot see end of moldboard when he is seated.	Equipment damage.	None.	Add caution in manual. Exercise additional care during moldboard rotation.	III	A
13. Accelerator pedal	Stuck in high idle due to mud/rocks around pedal (more prevalent in muddy conditions).	Personnel injury/ equipment damage (loss of vehicle control).	None.	Check area under pedal frequently for rocks/mud. Keep cab area clean. Redesign pedal system.	II	D

Table 2.6-1. Safety Incidents and Recommended Improvements (Continued)

Item Component	Incident or Problem	Personnel/ Equipment Impact	Corrective Action Taken	Recommendation	Class of Hazard (MIL-STD-882A) Severity	Probability
14.Mirrors	Broken brackets.	Personnel injury/ equipment damage. Inadequate rear visibility with cab installed (when brackets are broken).	Modified mirror brackets (not tested).	Frequent inspection of brackets. Redesign brackets.	III	C
15.Floodlights	Reflect off dumper rock guard.	Operator turns floodlights off when backing up dumper.	None.	Use guide for backing up dumper at night. Redesign bracket.	III	C
16.Floodlights	Are not adequate for night grader operations.	Operator has great difficulty seeing grader blade at night.	None.	Exercise additional care during night grader operations. Redesign bracket.	III	C
17.Battery cables	Damaged due to rubbing in access slot & being struck by edge of hood.	Personnel injury/ equipment damage (loss of battery power to vehicle; possibility of fire if shorted).	Cable routing changed (not tested).	Frequent inspection of battery cable.	III	C
18.Dolly wheels	Wheels used as a step.	Personnel injury (slipping when stepping on wheel).	Warning in manual & warning stencil on wheel cylinder.	Warn operators and maintenance personnel not to step on dolly wheels.	III	B
19.Coupler locking ring stuck when trying to uncouple	Operators rapidly move steering wheel back & forth to break loose locking ring. At the same time, the engine is accelerated to keep up steering.	Personnel injury (if the transmission is inadvertently placed in gear, the FAMECE could unexpectedly lurch forward due to the high engine speed).	Instructions in manual require transmission to be in neutral during this particular operation.	Add warning in manual (make sure that transmission is in neutral during uncoupling operations while disengaging the locking ring).	III	D

Table 2.6-1. Safety Incidents and Recommended Improvements (Continued)

Item Component	Incident or Problem	Personnel/ Equipment Impact	Corrective Action Taken	Recommendation	Class of Hazard (MIL-STD-882A) Severity	Probability
19. (Cont)	pressure. Personnel are likely to be close to the coupler area observing the locking ring position during this operation & could be exposed to injury if the transmission is placed in gear.					
20. Coupler locking ring stuck when trying to uncouple	Locking ring stuck & cannot be loosened with release cylinder.	Personnel injury. (Steel bar & sledge hammer used to break loose locking ring).	None.	Add warning in manual. Operations should be supervised carefully.	III	C
21. Throttle linkage & injection pump	Adjustments close to hot surfaces.	Personnel injury (burns).	None.	Add warning in manual (wait until hot surfaces cool).	III	
22. Step surface under fuel/ oil filters	Covered with oil from filters.	Personnel injury (fall due to slipping).	None.	Add deflector. Surface should be cleaned after maintenance and other times as necessary.	III	B
23. Fire extinguisher	Not easily accessible in configurations where operator faces engine or power section.	Personnel injury equipment damage (fire extinguisher difficult to reach).	None.	Relocate fire extinguisher. Operating personnel should familiarize themselves with the relative location of the fire extinguisher in each configuration.	II	C

Table 2.6-1. Safety Incidents and Recommended Improvements (Contin

Item Component	Incident or Problem	Personnel/ Equipment Impact	Corrective Action Taken	Recommendation	Class of Hazard (MIL-STD-882A) Severity	Class of Hazard (MIL-STD-882A) Probability
24. Dozer winch	Possible winch cable breakage & subsequent whipping.	Personnel injury (cab area would be in path of whipping winch cable).	Installed cable restrainer guide on dozer blade (not tested).	Frequent inspection of cable.	II	D
25. Loader	Material falling off back of bucket due to operator error.	Personnel injury/ equipment damage (broken windshield).	None.	Operators should be cautioned not to tip bucket back toward cab when bucket is in fully raised position. Also should not overfill bucket. Add warning in manual.	II	D

Table 2.6-1. Safety Incidents and Recommended Improvements (Continued)

Item Component	Incident or Problem	Personnel/ Equipment Impact	Corrective Action Taken	Recommendation	Class of Hazard (MIL-STD-882A) Severity	Probability
24. Dozer winch	Possible winch cable breakage & subsequent whipping.	Personnel injury (cab area would be in path of whipping winch cable).	Installed cable restrainer guide on dozer blade (not tested).	Frequent inspection of cable.	II	D
25. Loader	Material falling off back of bucket due to operator error.	Personnel injury/ equipment damage (broken windshield).	None.	Operators should be cautioned not to tip bucket back toward cab when bucket is in fully raised position. Also should not overfill bucket. Add warning in manual.	II	D

Table 2.6-2. Results of Safety Evaluation Checklist

Question/Requirement	Findings/Answers	Resultant Hazard (if any)
PART I: GENERAL EQUIPMENT HAZARDS		
1. Number, location, type, and accessibility of fire extinguishers provided.	One 10B:C fire extinguisher provided on fender above fuel oil filters. Not easily accessible by operator in puller configuration.	II (see Table 2.6-1).
2. List of audible warning devices and if they may be heard above vehicle-system noises.	One device covers following functions and may be heard above normal vehicle noise: (1) Low air pressure (4) Converter temperature (2) Low oil pressure (5) Low coolant (3) Engine temperature (6) Low hydraulic reservoir	None.
3. List of fault-locating systems, if provided.	Four warning lights provided.	None.
4. List of critical warning lights and effectiveness of lights with regard to visibility in sunlight, brightness, and color.	No safety problems found with visibility and colors.	None.
5. List of auditory backups for systems that cannot be monitored continuously.	See item 2, above.	None.
6. Identification of inadequate color-code techniques and danger-range problems with gages.	No safety problems encountered in color-code or danger-range identification.	None.
7. Location of walking and stepping surfaces not provided with nonskid surfaces.	(1) Top of distributor tank around hatch. (2) Rungs of distributor ladder.	III. III.
8. Identification of inadequate means of access or ingress/egress.	See item 7, above.	III.
9. Identification of inadequate guarding or insulating features.	(1) Winch cable breakage. (2) Material falling off back of loader bucket. (3) Battery cables worn through.	II (see Table 2.6-1). II (see Table 2.6-1). III (see Table 2.6-1).
10. Locations of areas where accumulations of grease or oil on vehicle parts could result in personnel injury.	(1) Stepping surface under filters on power unit. (2) In cab under steering control valve.	III (see Table 2.6-1). III (see Table 2.6-1).

Table 2.6-2. Results of Safety Evaluation Checklist (Continued)

	Question/Requirement	Findings/Answers	Resultant Hazard (if any)
11.	Location of nonfunctional sharp edges, projecting points, and excessive length of fastening devices.	Emergency brake handle bracket may be bumped by tall operator. Dash on right side may interfere with knees of tall passenger.	IV Negligible.
12.	List of warning circuits that are combined rather than separate.	Same as item 2, above.	None.
13.	List of electrical systems or components not properly grounded or protected.	Battery cable insulation worn through.	III.
14.	List of electrical systems or components that could spark and cause a fire or an explosion.	Battery cable.	III.
15.	List of all jacking and hoisting points not clearly and conspicuously marked.	Lift loops on ROPS.	IV Negligible.
16.	Record of all compartments not provided with a positive open-position lock as required.	None noted.	None.
17.	List of latches and struts that are inadequate to secure hinged or sliding components that could cause injury.	Hood support arm inadequate.	III (see Table 2.6-1).
18.	List of foldout assemblies that are not restrained.	None.	None.
19.	List of springs that may be dislodged and cause personnel injury or adjustment screws that are too close to high voltage or excessive heat.	Throttle linkage and injection pump adjustments are close to turbocharger.	III (see Table 2.6-1).
20.	List of systems, linkages, or assemblies that require caution, data, or instruction plates in order to reduce or prevent safety hazards.	(1) Hydraulic tank hot surface. (2) Hearing protection on power section. (3) Articulation warning. (4) Dropping dump body stands. (5) Operator's instructions in cab. (6) "No step" on dolly wheel support arm.	All items have caution plates as required. Also see Table 2.6-1 for dolly wheels.

Table 2.6-2. Results of Safety Evaluation Checklist (Continued)

	Question/Requirement	Findings/Answers	Resultant Hazard (if any)
6.	Are the windshield wipers adequate for their intended use?	Yes.	None (see Table 2.6-1 for failure conditions).
7.	Does the operator's compartment provide clear visibility for all operations?	Visibility for grader operations is a problem with the cab installed.	III (see Table 2.6-1).
8.	Is fresh air ventilation adequate for operator's compartment?	No ventilation problems were noted.	None.
9.	Is a master electrical disconnect switch available and easily reached by the operator?	Switch is mounted on the battery box (not easily accessible in the puller configuration, and not easily accessible in the pusher configuration with the canvas cab in place).	III Marginal.
10.	Are rear view mirrors adequate?	Mounting brackets are not adequate.	III (see Table 2.6-1).
11.	Are any safety hazards created by fording operations?	Some brake degradation is experienced after fording operations, but not unusual for this type of equipment.	III (see Table 2.6-1).
12.	Will the scraper apron locking device secure the apron in the fully opened position?	Yes.	None.
13.	Is a positive locking device provided to hold scrpaer bowl in raised position for all transport modes?	Yes.	None.
14.	Is a positive locking device provided to secure ejector in both full forward and full returned positions?	Yes (but inconvenient).	IV Negligible.
15.	With the moldboard sideshift in center position, does the operation of any grader controls cause interference which might result in equipment damage or component failure?	Interference was noted which damaged both the midmount bearing cover and manifold hoses.	III (see Table 2.6-1).

Table 2.6-2. Results of Safety Evaluation Checklist (Continued)

Question/Requirement	Findings/Answers	Resultant Hazard (if any)
16. Is a positive mechanical lock provided to hold the dozer blade in raised position not less than 20 inches above the ground?	Yes.	None.
17. Does the dozer blade lock require the use of any tools for application?		
18. Will the dozer blade lock withstand the maximum downward force at the closer hydraulic system?	Yes.	None.
19. Is the dumper bed adequate for troop transport?	See HFE subtest.	See HFE subtest.
20. Does the dumper rock-guard over the operator's cab offer adequate protection?	Yes.	None.
21. Is distributor manhole access to tank adequate?	Yes.	None.
22. Does distributor access ladder have adequate nonslip steps?	No. Ladder steps should be improved. They seem to be adequate for most operations, but caked mud on boots could cause a slipping hazard.	III.
23. Does tank overflow contact distributor chassis, power train, or walking/working surfaces?	Condition not noted.	IV Negligible.
24. Are batteries and battery box located away from heat, well ventilated, and equipped with drain holes?	Yes.	None.
25. Is the vehicle air horn adequate?	Yes.	None.
26. Are the seat belts adequate and installed per SAE J386?	Yes (in accordance with manufacturer's certification).	None.

Table 2.6-3. Safety Checklist
(AMCP 706-134, Table 15-3)

Question/Requirement	Findings/Answers	Resultant Hazard (if any)
Numbered per Test Plan		
1. Are mechanical guards provided on all moving parts of machinery and transmission equipment in which personnel may become injured or entangled?	Scraper driveshaft/universal joint is unguarded below and behind the operator's compartment. Breakage at the joint could endanger the operator from the broken end of the shaft hitting the seat. The probability of occurrence is extremely low.	III Marginal.
2. Are edges of components and maintenance access openings rounded or protected by rubber, fiber, or plastic protectors to prevent personnel injury?	Yes.	None.
3. Are portable hand-operated fire extinguishers provided where fire hazards exist or may be created, and are they of the correct type?	Yes.	None (see Table 2.6-1 for accessibility).
4. Are fire extinguishers placed where they are readily accessible, but not immediately adjacent to points where fire would probably originate?	Not easily accessible.	I[illegible] (see Table 2.6-1).
5. Are audible warning signals distinctive and unlikely to be obscured by other noises?	Yes.	None.
6. Not applicable.	N/A.	N/A.
7. Are critical warning lights isolated from other less important lights for best effectiveness?	No; all are on same panel.	IV Negligible.
8. When selecting warning lights, are they compatible with ambient illumination levels expected? Are dimmer controls utilized, if necessary?	No safety problems were found with the warning lights. The safety evaluation does not address, however, any HFE shortcomings/deficiencies.	None.
9. Do displays which cannot or may not be watched continously, but which require continuous monitoring, have suitable auditory warning backup?	Yes.	None.

Table 2.6-3. Safety Checklist (Continued)
(AMCP 706-134, Table 15-3)

Question/Requirement	Findings/Answers	Resultant Hazard (if any)
10. Not applicable.	N/A.	N/A.
11. Are color code techniques utilized which define operating and danger ranges to simplify check-reading?	Yes.	None.
12. Are control circuits and warning circuits designed so they are never combined?		
13. Are on-off or fail-safe circuits utilized wherever possible to minimize failures without operator knowledge?	Yes.	None.
14. Not applicable.	N/A.	N/A.
15. Not applicable.	N/A.	N/A.
16. Do vehicle electrical systems include suitable provisions to prevent sparking and other conditions which might cause fire or explosion when usage involves volatile and/or combustible materials?	See Table 1, No. 17.	III.
17. Not applicable.	N/A.	N/A.
18. Are jacking and hoisting points clearly, conspicuously, and unambiguously identified?	Yes.	None.
19. Not applicable.	N/A.	N/A.
20. Not applicable.	N/A.	N/A.
21. Are struts and latches provided to secure hinged and sliding components against accidental movement which could cause injury to personnel during maintenance operations?	Hood support arm not adequate.	III (see Table 2.6-1).
22. Not applicable.	N/A.	N/A.

Table 2.6-3. Safety Checklist (Continued)
(AMCP 706-134, Table 15-3)

Question/Requirement	Findings/Answers	Resultant Hazard (if any)
23. Are conspicuous placards mounted adjacent to high-voltage or very hot equipment?	Yes.	IV Negligible.
24. Do switches or controls which initiate hazardous operations, such as ignition, crane moving, etc., require the prior operation of a related or locking control?	Yes.	None.
25. Not applicable.	N/A.	N/A.
26. Not applicable.	N/A.	N/A.
27. Not applicable.	N/A.	N/A.
28. Are components located and mounted so that easy access may be achieved without danger to personnel from electrical charge, heat, sharp edges and points, moving parts, and chemical contamination?	See No. 19 under general equipment hazards.	IV Negligible.
29. Are mechanical components which require use of heavy springs designed so that the spring cannot be inadvertently dislodged and cause personal injury or damage to components?	Yes.	None.
30. Are warning plates provided where mechanical assemblies, linkages, springs, etc., are under constant strain or load?	No; no areas found where this would be necessary.	None.
31. Not applicable.	N/A.	N/A
32. When internal combustion engines are a part of the equipment, are the exhausts routed properly to prevent a concentration of carbon monoxide in the cab?	Yes.	None.
33. Not applicable.	N/A.	N/A.
34. Not applicable.	N/A.	N/A.

Table 2.6-3. Safety Checklist (Continued)
(AMCP 706-134, Table 15-3)

Question/Requirement	Findings/Answers	Resultant Hazard (if any)
35. In designing vehicles and their components, are materials used which will not produce hazardous environments under severe operating conditions?	No problems were found in this area. However, the test activity did not attempt to expose the equipment to extreme high temperatures which would probably be required to liberate toxic or combustible gases.	None.
36. Are exhaust pipes of internal combustion engines pointing upward to lessen danger of igniting flammable liquids which may collect on the ground or floor?	No; the exhaust pipe is routed horizontally to meet IR suppression requirements.	IV Negligible.
37. Are warning lights provided to indicate fire or excessive heat in areas not visible to drivers of vehicles?	Yes; high engine temperature and high converter temperature.	None.
38. Is the correct type of fire extinguisher mounted on vehicles at the driver's position?	No; not at driver's position in puller mode.	II.

Table 2.6-4. Toxic Gas Measurements

Test Condition	Carbon Monoxide (CO)		Carbon Dioxide (CO_2)		Sulfur Dioxide (SO_2)		Nitrogen Dioxide (NO_2)	
	Cab	Dumper Bed	Cab	Dumper Bed	Cab	Dumper Bed	Cab	Dumper Bed
1. Warmup engine at idle	0	0	.25%	0	0	0	0	0
2. After 15 minutes travel at 15 to 20 mi/h on gravel loop	0	0	0	0	0	0	0	0
3. After 30 minutes travel at 15 to 20 mi/h on gravel loop	0	0	0	0	0	0	0	0
4. Engine at 2000 r/min facing into wind	0	0	0	0	0	0	0	0
5. Engine at 2000 r/min with wind toward buddy seat	0	0	0	0	0	0	0	0

Notes:

1. Test conditions:

- Date .... 14 Feb 1978
- Time 1030
- Temperature .... 32°F
- Barometric pressure 29.700
- Wind speed .... 8 knots
- Wind direction .... WNW
- Relative humidity 78%
- Location .... Fort Belvoir, VA MERADCOM Test Area

2. Test equipment characteristics:

Equipment	Sensitivity Range			
	CO	CO_2	SO_2	NO_2
MBA Universal Tester	10-3000 p/m	-	-	-
Bendix Gastec Model 400 Pump	-	1-10%	5-100 p/m	1-30 p/m

2.7 HUMAN FACTORS

2.7.1 Noise

2.7.1.1 Objective

To determine whether the sound pressure levels at the operator's station and in the bed of the dumper exceed safe limits.

2.7.1.2 Criteria

Noise requirements for FAMECE shall conform to MIL-STD-1474A, "Noise Limits For Army Materiel."

2.7.1.3 Method

The sound pressure levels were measured at the operator's seat and in the bed of the dumper; individual bandwidths from 63 Hertz through 8000 Hertz were measured and an overall noise level was calculated.

2.7.1.4 Results

Test results are given in Table 2.7-1.

2.7.1.5 Analysis

With the exception of "IDLE" condition, all sound pressure level measurements exceed the 85-dBa maximum allowable for 8-hour exposure as specified in MIL-STD-1474A; therefore, hearing protection will be required for the operator and any passengers riding in the dumper bed.

2.7.2 Toxic Gases

The toxic gases test is contained in the SAFETY section of this report.

2.7.3 Operator Seating

2.7.3.1 Objective

To determine whether MOS-qualified personnel can effectively operate all equipment controls when seated in the cab of the power section.

Table 2.7-1. Dumper Noise Measurements (dBa)

Band Width (Hz)	Idle (Cab)	Max r/min (Cab)	2/3 Max r/min (Cab)	25 mi/h (Cab)	25 mi/h (Dumper bed)
63	95	95	95	105	105
125	90	98	95	100	100
250	85	100	95	102	95
500	81	95	91	98	90
1000	79	92	92	92	80
2000	75	87	86	90	75
4000	65	83	80	82	70
8000	55	75	76	75	65
Overall Noise Level (dBa)	84.1	97.4	95.3	99.3	91.4

NOTES:

1. Measurements made with fabric cab installed.
2. Overall noise level calculated in accordance with TB MED 251.

2.7.3.2 Criteria

Operator seating must accommodate a 5th to 95th percentile soldier dressed in arctic clothing.

2.7.3.3 Method

Clearances were measured between the operator's seat and surrounding equipment structures and controls. These dimensions were compared with the clearances recommended in MIL-STD-1472B. The reach required to operate controls was compared to the anthropometric data for 5th percentile soldiers.

2.7.3.4 Results

All switches and controls in the operator's station were within reach of the 5th percentile soldier. A comparison of actual clearances and clearances recommended in MIL-STD-1472B is shown in Table 2.7-2.

2.7.3.5 Analysis

The clearance distances from the operator's seat to structures and controls surrounding the seat meet the requirements of MIL-STD-1472B and facilitate effective control of the equipment by MOS-qualified personnel; however, the handle of the parking brake in the set position presents an obstruction to an operator entering the cab.

Table 2.7-2. Recommended and Actual Clearances Around Operator's Station (Dumper)

Measurement Reference Points	Recommended Clearances (in.) (MIL-STD-1472B, Table XXIV)	Actual Clearances (in.)
A. Elbow (dynamic).	A. 36.00	A. N/A
B. Elbow (static).	B. 28.00	B. 31.00
C. Shoulder.	C. 23.00	C. 23.00
D. Knee width (minimum).	D. 18.00	D. 23.00
E. Knee width (optimum).	E. 24.00	E. 8.75
F. Boot — provide adequate clearance to operate brake pedal without inadvertent acceleration operation.	F. 6.00	F. 3.00
G. Pedals (minimum).	G. 2.00	G. 8.00
H. Boot — provide adequate clearance to operate accelerator without interference by brake pedal.	H. 6.00	H. —
1. Head (seat reference point to roof line).	1. 42.00	1. —
2. Abdominal (seat back to steering wheel).	2. 16.00	2. 21.50
3. Front of knee (seat back to manuals/controls on dash).	3. 29.00	3. 31.00
4. Seat depth (seat reference point to front edge of seat pan).	4. 16.00	4. 17.00
5. Thigh (underside of steering wheel to seat pan).	5. 9.50	5. 10.00
6. Seat pan height.	6. 15.00	6. 17.50
7. Boot (front of steering wheel to heel point of accelerator).	7. 14.00	7. 16.25
8. Minimum mitten clearance around steering wheel.	8. 3.00	8. 4.75
9. Knee-leg-thigh (brake-clutch pedal) to lower edge of steering wheel.	9. 26.00	9. 26.00

Notes:

1. Recommended clearances are for accommodation of 95th percentile soldier in arctic clothing.
2. Operator seat in rearmost position for all measurements.

2.7.4 Visibility

2.7.4.1 Objective

To determine the adequacy of internal and external visibility provided the operator.

2.7.4.2 Criteria

Visibility shall meet the requirements of paragraphs 5.2 and 5.12.5 of MIL-STD-1472B. Interior lighting shall permit effective operation during night and blackout conditions. Caution and warning lights shall not "wash out" under daylight conditions.

2.7.4.3 Method

The external field of view (forward and rearward) from the operator's eye position was noted and compared to requirements of MIL-STD-1472B. Also noted were the viewing distances to the ground.

The luminance of the individual gauges was measured using a spot brightness meter. The locations and visibility of the gauges were also noted and compared to the requirement.

2.7.4.4 Results

a. External Visibility. The external field of view from the operator's seat (without fabric cab installed) slightly exceeds the 180° minimum requirement of MIL-STD-1472B. However, the operator cannot view the ground any closer than 10 feet forward of the dumper. The minimum ground viewing distance varies with direction, reaching 21 feet 4 inches when looking directly over the hood.

The rearview mirrors provided on FAMECE had a low survivability rate and sometimes were missing from the vehicle. The plastic windows of the cab often became coated with a residue of dirt and water, reducing visibility. The reduced visibility may have been a significant contributing factor in nine documented (EPR) instances which ranged from a broken fender, caused by striking tree stumps, to a near accident. A second contributing factor to poor visibility is the location of the operator. With the exception of the dumper, most industrial construction equipment designs place the operator's station along the centerline of the vehicle, whereas in FAMECE, the operator is never located along the centerline. This results in diminished road and curb side visibility.

In addition to the general complaint concerning visibility, four specific visibility problems were associated with FAMECE:

(1) Loader operator cannot see the front wheels.
(2) Dumper operator cannot see passengers in the bed.
(3) Grader operator cannot see the moldboard.
(4) Distributor operator has difficulty determining the water level using the sight gauge provided.

The loader accident mentioned in the previous paragraph was the result of the operators not noticing that, due to the slope of the ground, the front left tire was several inches above the right tire. When the operator raised a loaded bucket, the center of gravity changed and caused the loader to tip over onto the passenger side.

When carrying passengers in the bed of the dumper, the operator cannot see the passengers, and the passengers have no means of signaling the operator. The noise levels preclude shouting, and banging on the rockguard by passengers is not adequate communication.

The moldboard on the right side of the grader is not visible to the operator. There were frequent occurrences of the blade being moved too far to the right and damaging various subassemblies, including the air hose supplying pressure to the grader brakes.

The water distributor sight glass is located on the left front corner of the water tank, requiring the operator to look over his left shoulder to see the glass. The problem increases when mud is thrown up by the tires and covers the sight glass.

b. Internal Visibility

(1) Line of Sight Visibility. All gauges on the right-hand instrument panel exceed the minimum requirements of 45° from the normal line of sight. The actual angle varies from 46° to 50° depending on the height of the gauge from the floor of the cab and the height of the adjustable seat. This introduces some parallax into the readings. Included on this panel are the converter oil temperature, engine lubricating oil pressure, brake system air pressure, voltmeter, hourmeter, and tachometer. It is possible for the operator to place his knee in the line of sight of these gauges and the associated warning lights. Not having the warning lights grouped together is a violation of paragraph 5.2.2.1.5 of MIL-STD-1472B. Also, the location of the speedometer away from all other gauges does not meet requirements of paragraph 5.2.1.3.6 of the standard.

(2) Lighting. The right-hand panel is illuminated with one red floodlight. The speedometer gauge is provided with its own integral red lighting. The difference in brightness of the two lights is considerable. The speedometer lighting was so dim as to register below .001 foot-lamberts. when measured with a photometer. A determination of luminance contrast was not possible due to the dimness of the gauge. The technician, although not completely dark adapted, was unable to distinguish the speedometer pointer beyond distances of 8 inches. The floodlighting provided is adequate to determine the position of the various switches on the panel but is positioned so as to be of aid in the reading of the speedometer.

The left-hand panel is provided with white lighting. The use of white lighting is not consistent with dark adaptation. The average luminance value for the gauges was .145 lamberts. The measured contrast ratio was 88%. Both of these values meet the requirements for FAMECE. The warning lights provided with each gauge were originally red in color; however, due to age and field use, the red coating had worn off and the lights were essentially white in color. When measured, the luminance values exceeded the range of the photometer being used. This value (10 foot-lamberts) greatly exceeds the brightness limit, 1 foot-lambert, as listed in Table XX of MIL-STD-1472B. Because of the worn condition of the red coating on the lights, no attempt was made to determine "washout" of caution and warning lights.

(3) Other incidents noted were:

(a) Both the tachometer and speedometer experienced condensation beneath the glass which interfered with reading both dials.

(b) The lamp test switch is incorporated into the start button. Depressing the button with the engine running tests the lights. This switch is labeled only "START," with no mention of its secondary function.

2.7.4.5 Analysis

Operator visibility both internally and externally is poor. This is especially true at night when the operator cannot maintain night adaption. The instrument lighting provided is poor and should be redesigned, and the cab reduces external visibility to the point of degrading performance.

2.7.5 Control/Display Integration

2.7.5.1 Objective

To determine whether the location and grouping of controls and displays is in accordance with good human engineering practices and accepted industry standards.

2.7.5.2 Criteria

The location and grouping of controls and displays shall meet the requirements of paragraphs 5.1 and 5.4 of MIL-STD-1472B and the accepted industry practice as specified in the SAE Handbook.

2.7.5.3 Method

The design of the FAMECE power section was compared to paragraph 5.1 of MIL-STD-1472B. The location, grouping, and direction of movement of controls was compared to the SAE handbook for compliance with industry standards.

2.7.5.4 Results

With one exception, the design of the FAMECE power section meets the requirements of MIL-STD-1472B — the tachometer and speedometer, functionally related displays, are not located near each other. The tachometer is located on the left-hand panel and the speedometer on the right-hand panel.

The general requirements of SAE have been met; however, with the exception of the grader, specific industry standards do not exist for the location and grouping of controls. With regard to the grader controls, SAE J1071 specifies the direction of control movement resulting in a corresponding movement of the grader. The Circle Reverse, Circle Side Shift, and the Blade Side Shift controls of the grader do not meet the industry standards. For example, moving the "Blade Side Shift" control forward moves the blade to the right; SAE J1071 calls for a forward movement of the control to move the blade to the left. Other differences in FAMECE equipment design from SAE requirements are:

a. SAE J1071 calls for the transmission controls to be located for right-hand operation; in FAMECE, it is a left-hand operation.

b. Just as in the other work sections, the grader controls are separated into groups; however, unlike the other sections, where the controls are right-hand operations, the position of the grader controls requires operation by both hands. The

Left-Hand Blade Lift and the Right-Hand Blade Lift are located to the left of the steering wheel. The Blade Tilt and Blade Side Shift are located just to the right of the steering wheel. The Circle Side Shift, Circle Reverse, and the Scarifier are located to the far right of the steering wheel.

2.7.5.5 Analysis

With training and experience, engine sound often replaces the tachometer as the source of information concerning engine speed. This probably explains why few operators complained about the location of the tachometer.

The lack of problems with the grader controls could be due to the inexperience of the operators with other industrial graders. While the industrial graders generally position the operator along the centerline of the vehicle, the FAMECE operator sits to one side. The design for these controls is consistent with the operator's location and good human engineering principles and meets the requirements of paragraph 5.4.1.2.1 of MIL-STD-1472B.

2.7.6 Observation

2.7.6.1 Objective

To observe the human engineering aspects of FAMECE operation, including ingress/egress, normal operation, coupling/uncoupling, and maintenance.

2.7.6.2 Criteria

The requirements of MIL-STD-1472B and good human engineering practice. Coupling/uncoupling must be accomplished in a maximum time of 30 minutes for each operation.

2.7.6.3 Method

Data were obtained by observing personnel operating and maintaining FAMECE and by reviewing equipment performance reports.

2.7.6.4 Results

a. Ingress/Egress. The ladder is not centered in the entranceway resulting in an awkward reach for the handrail. Other factors which make ingress/egress difficult are:

(1) The mirror is mounted directly above the ladder, causing the operator to strike his head when entering the vehicle.

(2) The dolly wheels, located directly below the entranceway, offer an inviting step. Someone trying to use the wheels as steps could be seriously injured.

(3) The front lifting eye on the road side of the dumper, as presently located, is a tripping hazard.

(4) The cab door opens across the entrance platform, requiring personnel attempting to enter the cab to stand on the ladder and make an awkward reach to open the door. The cab door is only 14.5 inches wide.

b. Coupling/Uncoupling. The coupling/uncoupling operation, performed by two enlisted men and one NCO, was carried out on level, rough terrain at night. The use of flashlights, in addition to vehicle lights, was necessary for task performance. All personnel wore gloves rather than mittens. Coupling/uncoupling operations were each carried out within the 30 minute requirement.

c. Normal Operation. The following problem areas, in addition to those previously mentioned, were observed during operation.

(1) The fire extinguisher, located behind the battery box, does not rotate with the cab; thus when the vehicle is in the puller mode, the operator cannot reach the fire extinguisher without crossing the cab.

(2) The tailgate support pins, originally designed for removal by hand, jam and require the use of a hammer for removal. The pins, located 73 inches from the ground, are beyond the 71.5-inch reach of the 5th percentile soldier.

(3) The exhaust located at eye level of a 95th percentile soldier directs emission into the faces of personnel working on the curb side of the vehicle.

(4) The size and location of the "buddy seat" is inadequate for the 95th percentile soldier. The lack of shoulder clearance (with cab installed) is aggravated by vibration from rough roads. The seat backrest is 10 inches in height, instead of the required 18 inches.

(5) Operators complained about the limited capacity and slow recovery rate of the air reservoir system.

(6) The labeling on controls peeled constantly.

(7) The body cover for the dumper bed was not available during testing. The combined effect of heat transfer to the cold truck body and the lack of a body cover will cause discomfort for personnel riding in the back of the dumper.

(8) The floor of the bed does not have any means for securing the cargo carried along with passengers, nor does it have any means by which the passengers can brace themselve.

(9) Passengers have no means of communicating with the driver.

(10) The height of the first step of the tailgate measures 27.5 inches; the maximum height according to MIL-STD-1472B is 16 inches.

(11) The steering valve, located above the operator's right foot, has a high failure rate and leaks oil onto the operator's right foot, the brake, and the accelerator.

(12) The engine hood does not have a positive lock for the open position. A strong wind could close the hood and result in serious injury to personnel working under the hood.

2.7.6.5 Analysis

The most serious of the problems observed and those warranting correction are:

a. Ingress/egress.
b. Location of the fire extinguisher.
c. Tailgate support pins.
d. No method to communicate between passengers in the bed and the driver.
e. No positive lock for the engine hood.

2.7.7 Vibration

2.7.7.1 Objective

The objective is to assess the ride quality of the FAMECE at both the operator's station and in the bed of the dumper.

2.7.7.2 Criteria

The FAMECE ride quality will be compared to the standard Army 5-ton truck.

2.7.7.3 Method

Vibration measurements were taken at two locations on each vehicle with an accelerometer. The locations chosen for FAMECE were beneath the driver's seat and on the road side of the dumper bed, 6 inches behind the axle and 6 inches from the side wall of the bed. On the 5-ton, there is no free space beneath the driver's seat. Therefore, the underside of the dash panel was used instead. Both the driver's seat and the dash panel are hard mounted to the cab of a 5-ton truck and, therefore, should be subjected to the same levels of acceleration. The selected location for the bed of the 5-ton corresponded to that picked for FAMECE (i.e., road side of the bed, 6 inches behind the axle, and 6 inches from the side wall of the bed).

In all cases, the vibration pickup was placed so as to measure vibration in the vertical axis only. A frequency of 5 Hertz was chosen for measurement because, as can be seen from Figure 36 of MIL-STD-1472, the human body is most sensitive to vibration at this frequency.

Both vehicles were driven over identical courses at speeds of 10, 15, 20, 25, and 30 mi/h. All vehicles were driven over the same section of the course at the same speed. The course consisted of three sections: paved road, unpaved road, and cross country. The vibration data were recorded on tape and later plotted on standard graph paper for comparison.

Along with the objective comparison of the two vehicles, a subjective evaluation was also done. The accessory passenger seats were installed in the aft of the FAMECE dumper bed, and 11 members of an engineer squad were asked to ride in both vehicles over the same course used for the objective test. The engineers carried the following tool kits with them into each vehicle during test: Long Pioneer, Short Pioneer, Carpenter, Demolition, and Mine Detector Tool Kits (Figure 2.7-1). Army procedure calls for the tool kits to be restrained while being transported in the 5-ton. However, since tying down the tool kits was not the common practice with the engineers used

Figure 2.7-1. Engineers and tool kits in dumper.

in this test, the kits were not tied down in the 5-ton truck. The FAMECE does not have provisions for tying down equipment carried in the bed of the dumper. After the test, the participants were asked to fill out a questionnaire which asked for a comparative rating of different aspects of the vehicles.

2.7.7.4 Results

The results for the paved and unpaved sections of the road test are presented in graphical form in Figures 2.7-2 through 2.7-7.

Because of the severity of the terrain traversed during the cross-country portion of the test, drivers were unwilling to drive at any but very low speeds (0 to 4 mi/h) and were unable to maintain a constant speed. Therefore, a comparison of the two vehicles for cross-country performance was not completed.

The subjective opinions of the engineer squad to the questionnaire have been summarized and presented in Table 2.7-3.

2.7.7.5 Analysis

As can be seen in Figures 2.7-2 through 2.7-4, the FAMECE operator's seat subjects the occupant to considerably less vibration than the 5-ton truck. This result is obviously due to the difference in construction of the two seats. As previously stated, the driver's seat in the 5-ton is hard-mounted to the frame of the cab. The operator has only a few inches of cushion material between his body and the source of the vibration. The FAMECE seat includes an adjustable vibration damping mechanism built into the seat.

With regard to the bed of each vehicle, there seems to be little difference between FAMECE and the 5-ton. Both vehicles subject passengers riding in the cargo areas to high levels of vibration.

The responses to the questionnaires indicate an overall satisfaction with FAMECE and a clear preference over the 5-ton truck. This preference was especially clear when it came to comparing the vehicles in cross country travel. Considering the similarity in the levels of vibration, the preference is probably best explained in terms of the difference in shape of the cargo areas. The FAMECE dumper is shaped so as to provide a distinct bench seat on either side of the vehicle. The engineers placed their tool kits in the bottom of the cargo area and sat on the steel bench seats (Figure 2.7-1). This arrangement does not allow the tool kits much freedom of movement and the high side walls of the FAMECE dumper provides a large backrest against which to brace oneself. This

contrasts sharply to the arrangement in the 5-ton. Here, the troops sat on their tool kits which were placed against the side walls of the truck. Positioned in this fashion, the troops were seated on boxes which were not restrained. Also, the height differential between the tool kits and the side walls left very little backrest against which to brace themselves.

Three other points from the returned questionnaires are noteworthy:

a. Although required to carry only a squad of 8, the 11 test participants generally felt there was more than adequate room for themselves and their equipment.

b. The test was conducted on a sunny day with temperatures in the mid-seventies. In spite of the pleasant weather, three soldiers complained about sitting on bare steel. In colder weather, the effect of body heat being transferred to the cold steel bed can be expected to be considerably more pronounced.

c. Of 4 men who sat with their backs next to the lifting eyes of the dumper bed, 2 asked that they be moved to preclude a head strike.

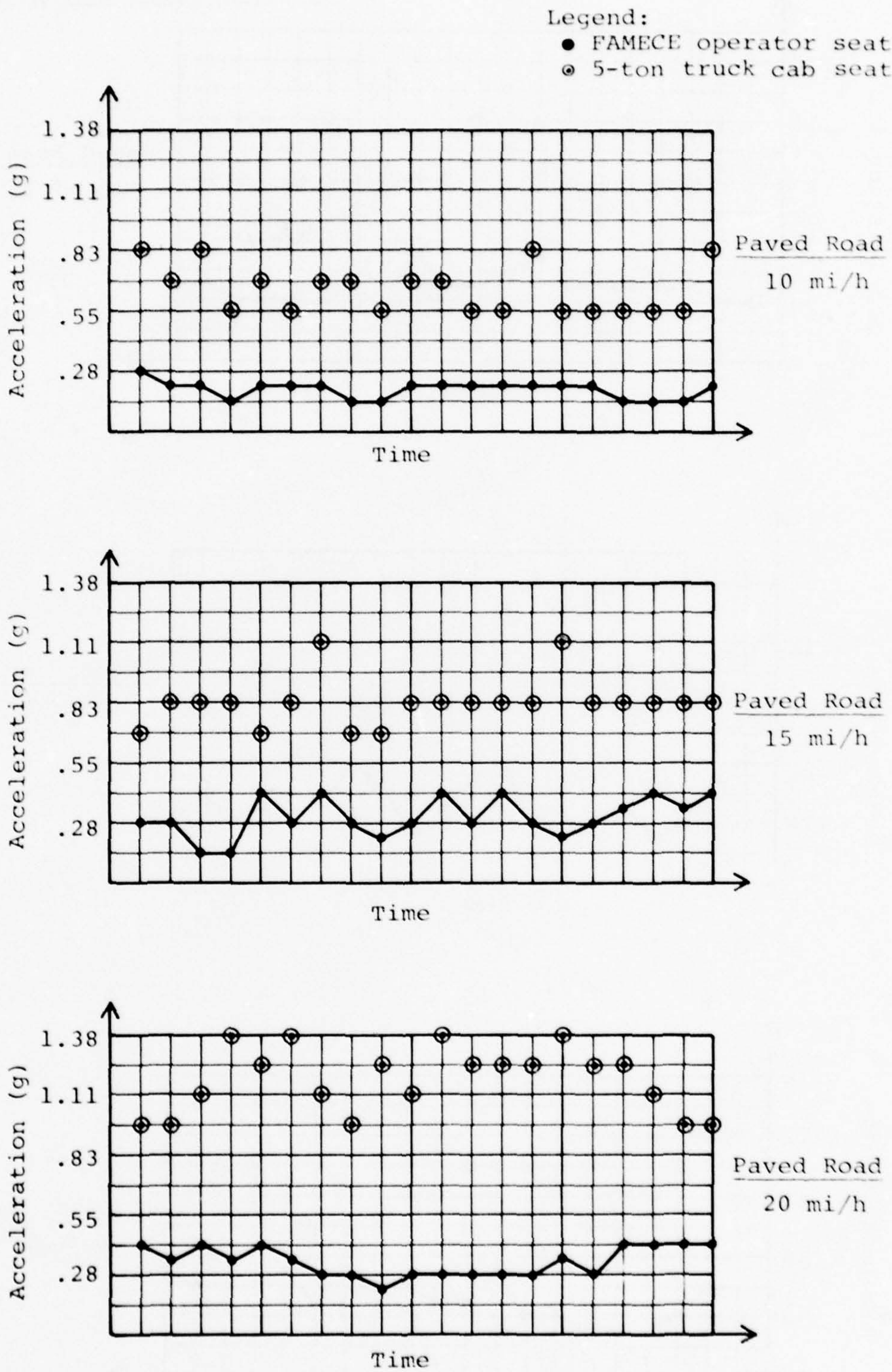

Figure 2.7-2. FAMECE and 5-ton truck vibration transmission.

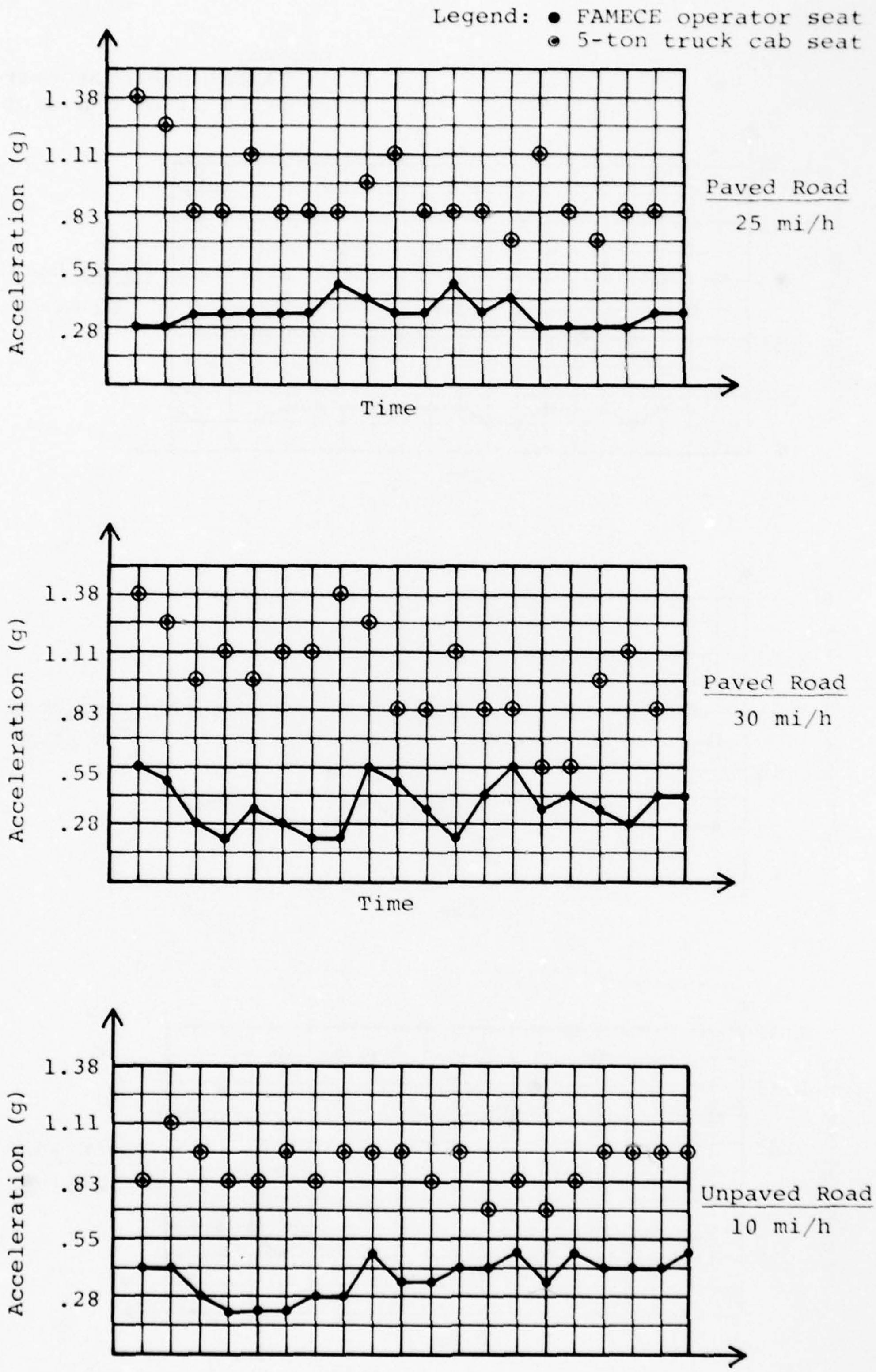

Figure 2.7-3. FAMECE and 5-ton truck vibration transmission.

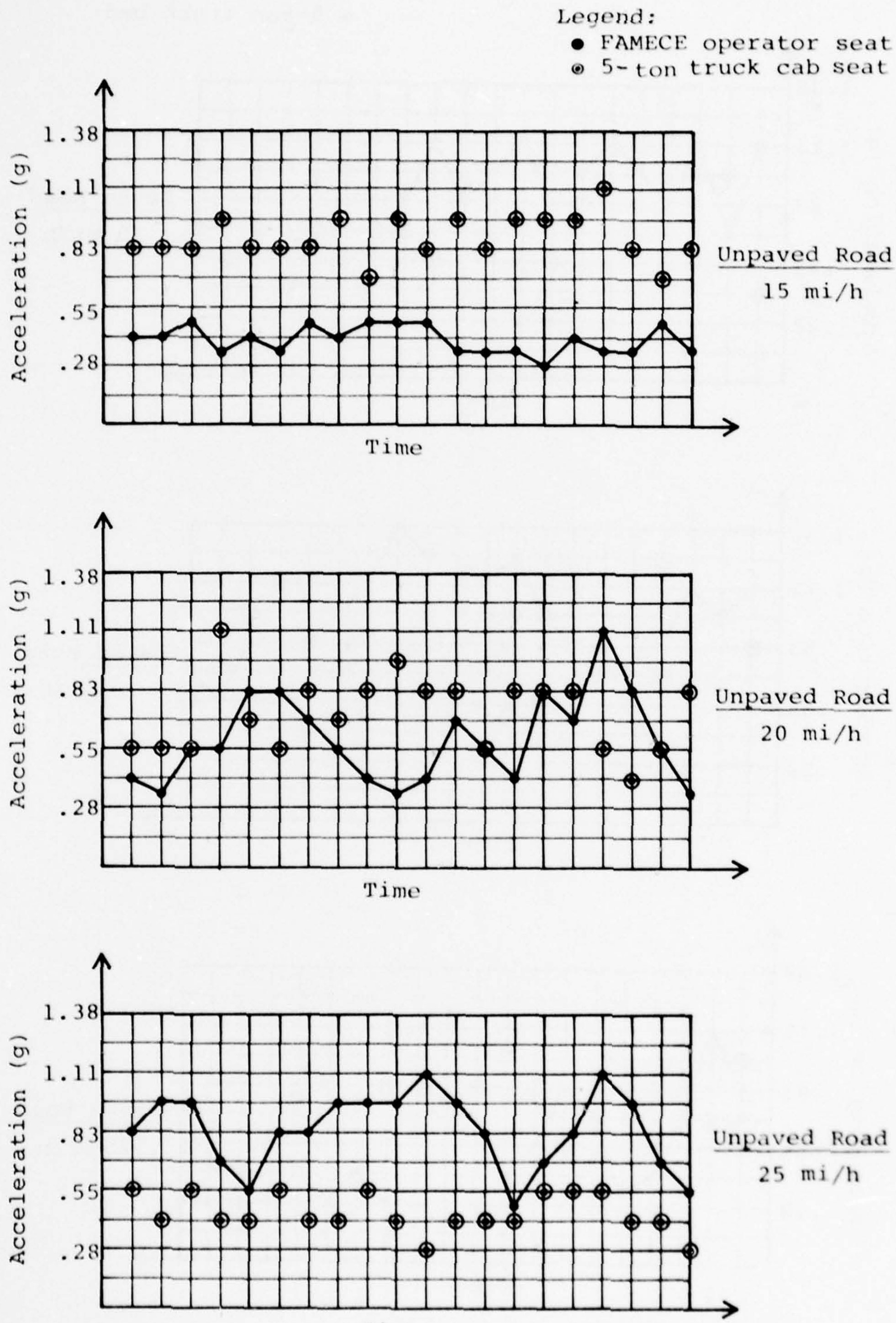

Figure 2.7-4. FAMECE and 5-ton truck vibration transmission.

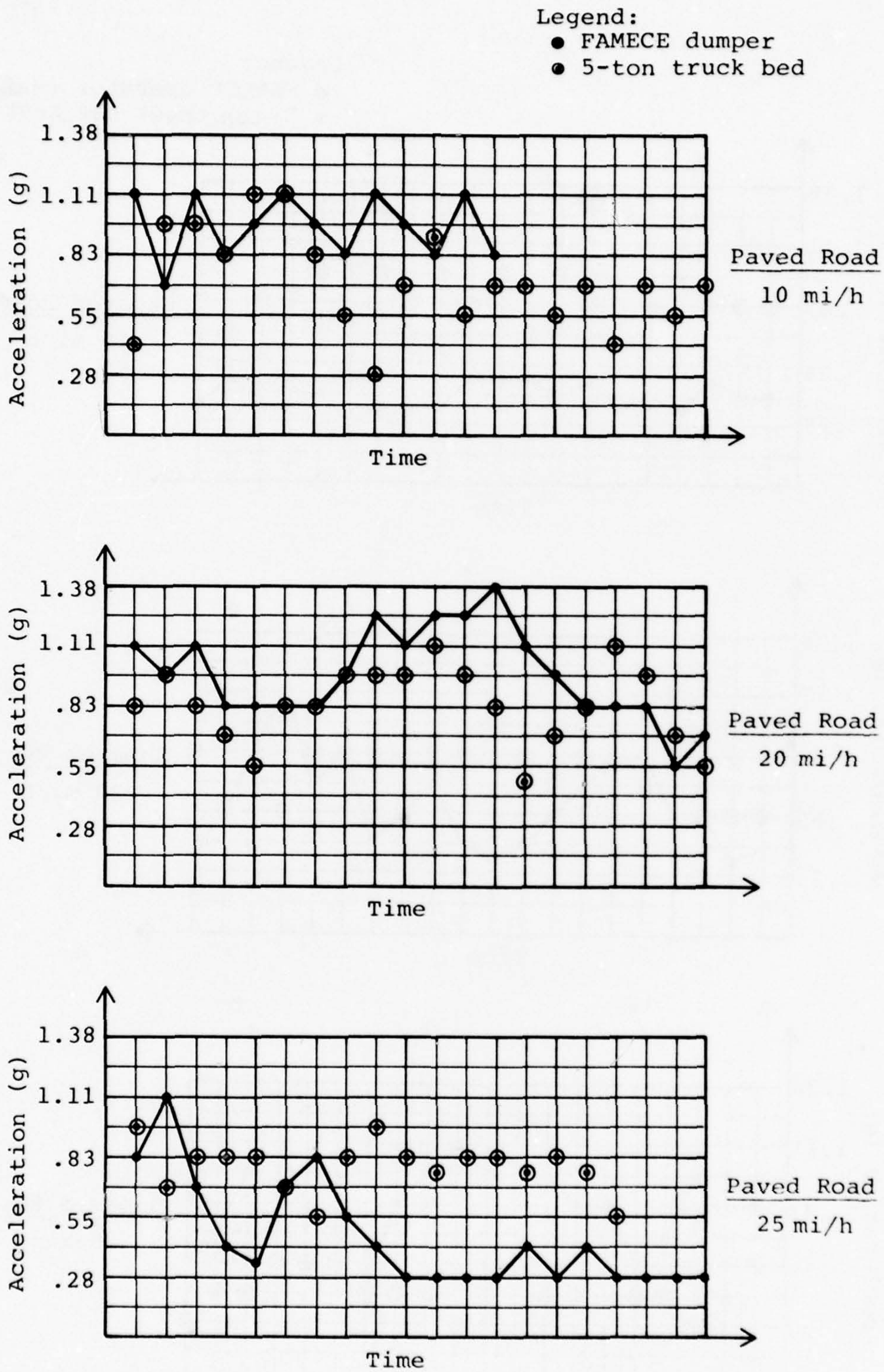

Figure 2.7-5. FAMECE and 5-ton truck vibration transmission.

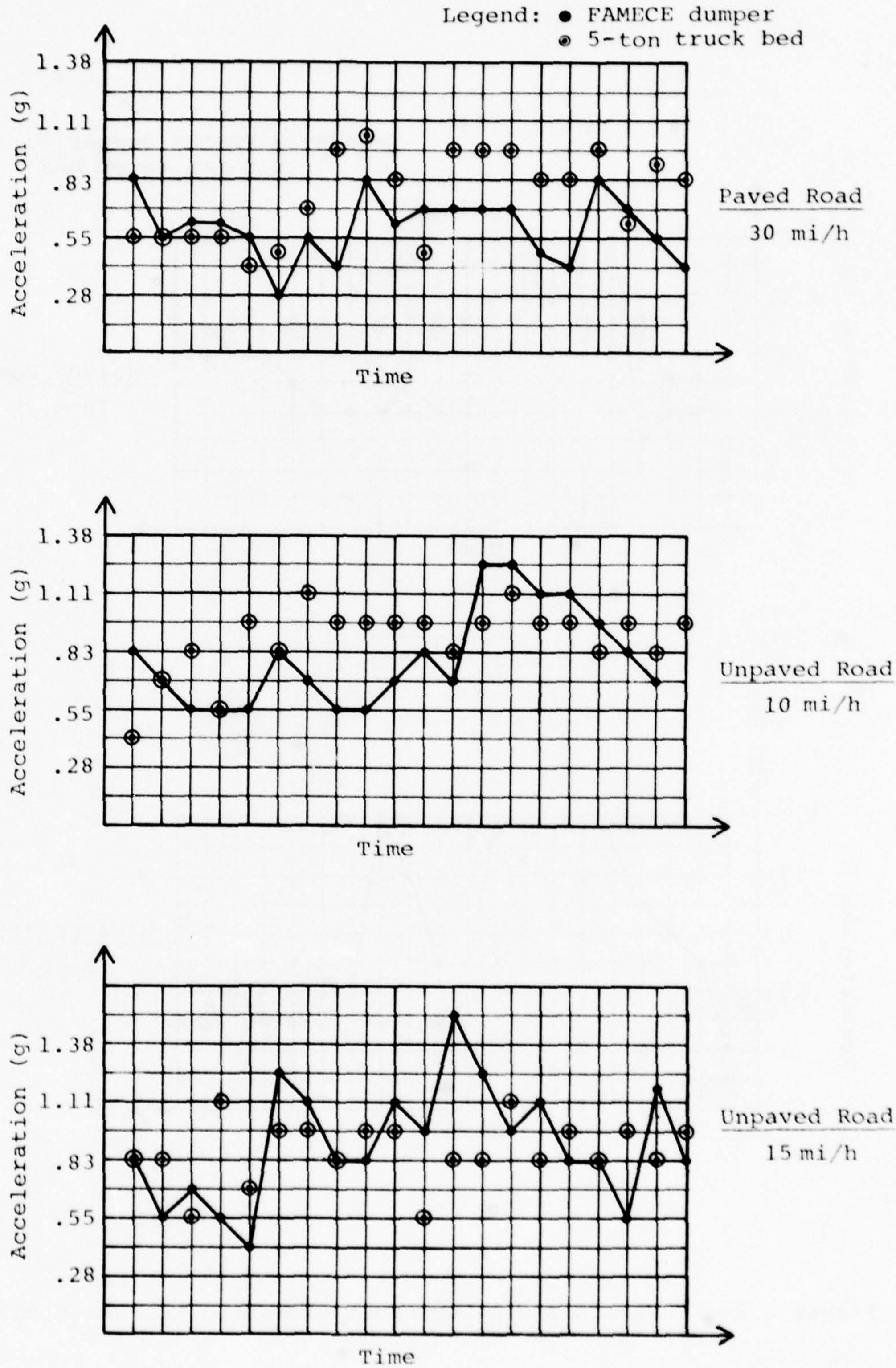

Figure 2.7-6. FAMECE and 5-ton truck vibration transmission.

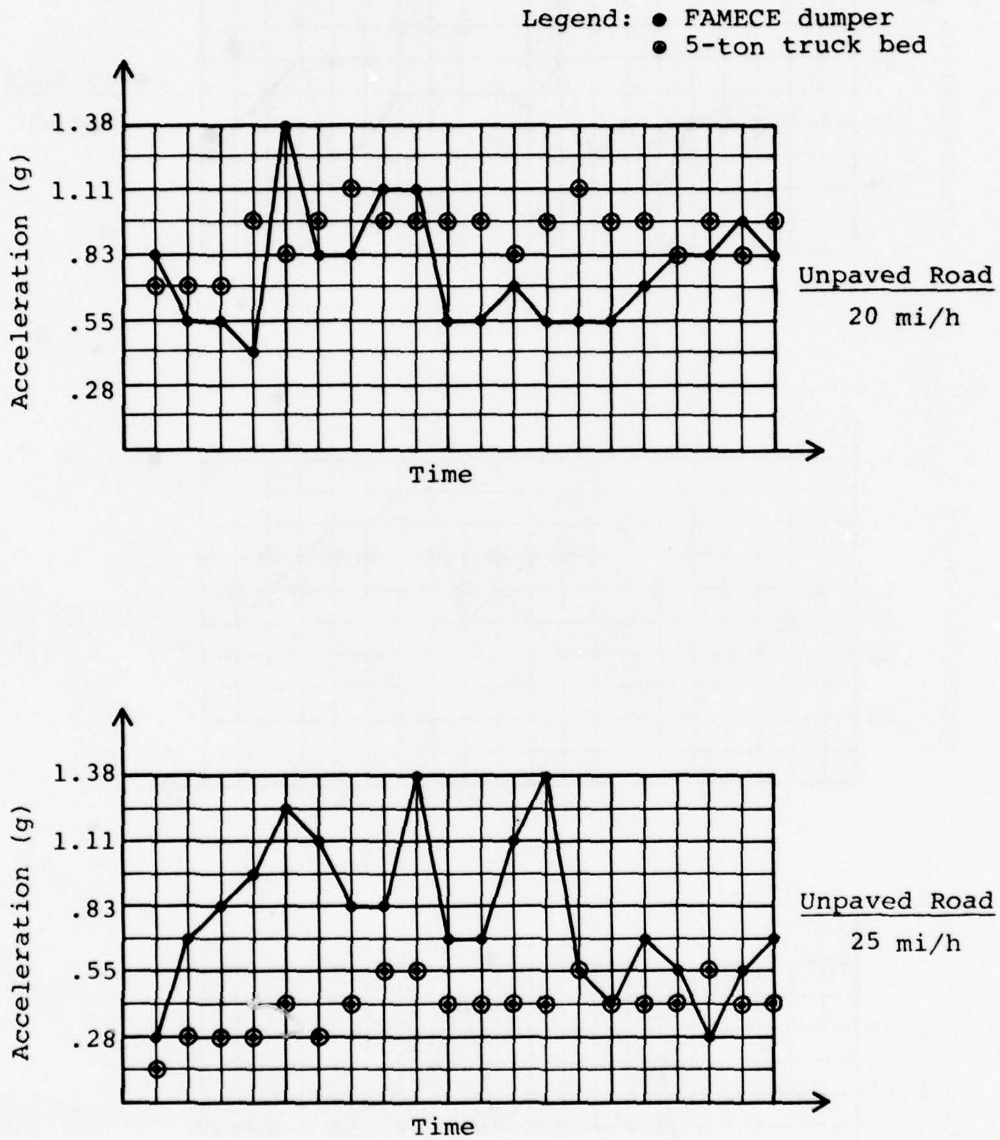

Figure 2.7-7. FAMECE and 5-ton truck vibration transmission.

Table 2.7-3. Comparative Rating of Ride Quality of FAMECE Dumper and Standard 5-Ton Truck

QUESTIONNAIRE

NAME:

RANK:

YEARS IN SERVICE:

YEARS IN MOS:

AGE:

HEIGHT:

WEIGHT:

(RESPONSE FROM 11 TEST PARTICIPANTS ARE ENTERED BELOW)

Instructions: You are participating in a field test to evaluate the ride quality of the FAMECE dumper. For each question below, please check the one column which most closely expresses your opinion.

	Excellent	Good	Fair	Poor	Terrible
Ease of entering the dumper bed	3	6	2		
Ease of loading equipment into the bed	2	6	3		
Adequacy of space for carrying equipment and men	2	6	2	1	
Smoothness of the ride on concrete road	5	4	2		
Smoothness of the ride on rough terrain					
a. Dirt road	4	6	1		
b. Cross country	6	3	2		

How does the 5-ton dump truck compare with FAMECE as far as ride quality?

	Much Better	Better	Same	Worse	Much Worse
Concrete road		1	8	2	
Dirt road	1	1	5	4	
Cross country	1			1	8

Comments:

Table 2.7-3. Comparative Rating of Ride Quality of FAMECE Dumper and Standard 5-Ton Truck (Continued)

For the following questions, please write out your answers.

1. a. While riding in FAMECE, were you ever bounced out of your seat?

   FAMECE: Yes - 3, No - 8
   5-Ton: Yes - 5, No - 1

   b. At any time were you worried about being bounced out of the dumper bed?

   FAMECE: Yes - 1, No - 10
   5-Ton: Yes - 3, No - 2

2. How much did the equipment placed in the bed move around because of vehicle vibration?

   FAMECE: Not very much
   5-Ton: A lot more than FAMECE

3. Did any of this equipment cause you concern as far as its moving around and possibly striking you?

   FAMECE: Yes - 0, No - 11
   5-Ton: Yes - 4, No - 2

4. Do you have any recommendations to make to improve FAMECE so as to make it easier in which to ride?

   Three requests for something other than steel to sit on; two requests for moving the lifting eyes; and three comments concerning dust entering the bed.

2.8 MAINTENANCE ANALYSIS

2.8.1 Maintainability Indices

2.8.1.1 Objective

To evaluate all maintenance data generated as a result of maintenance performed in support of the test items during the test and, based on these data, to compute various maintainability indices for comparison to the applicable criteria.

2.8.1.2 Criteria

a. Operator Daily Services and Inspections. (Essential) Requirements for inspections must be kept to a minimum. Before-operation and after-operation checks and services will not exceed an average of 30 minutes each [MN (ED)(QMR), para 11.j.].

b. Scheduled Maintenance. (Essential) Requirement for scheduled maintenance other than operator daily checks and services shall be established at 250 (desirable 400) hourmeter hours or quarterly, whichever occurs first. Such maintenance shall be performed in an average of 6.25 (5 desirable) man-hours using only available organizational maintenance means and skills [MN (ED)(QMR), para 11.k.].

c. The total scheduled and unscheduled operator, organizational, and direct support maintenance shall require no more than 0.30 man-hour per hourmeter hour of operation per vehicle (power section plus work section). The approximate breakdown by various levels of maintenance is shown below. Only the overall ratio of 0.30 is a firm requirement [MN (ED) (QMR), para 11.i.(1)].

d. Operator. Maintenance limited to cleaning, lubrication, minor adjustments, and replacement of some modular and minor components. Operator maintenance on any vehicle shall require approximately 0.03 man-hour per hourmeter hour of operation (exclusive of daily services and inspection) [MN (ED)(QMR), para 11.i.(2)].

e. Organizational. Maintenance limited to minor adjustments of components and replacement of assemblies (e.g., remove and replace starter motor, generator assembly). Service performed on any vehicle of the family shall require no more than approximately 0.18 man-hour per hourmeter hour of operation [MN (ED)(QMR), para 11.i.(3)].

f. Direct-Support Maintenance. Maintenance performed will include technical inspection and support assistance to units by contact teams in the repair or replacement of components, assemblies, and parts. Service performed on any vehicle of the family shall require no more than approximately 0.09 man-hour per hourmeter hour of operation [MN (ED) (QMR), para 11.i.(4)].

g. General-Support Maintenance. Maintenance performed will reinforce the direct-support maintenance units and will accomplish major end item repair and repair of components/ assemblies for return to stock. Extent of repairs will be determined by economic repair limits and stock status of replacement items. When required, general-support units provide overflow maintenance support for direct-support units [MN (ED)(QMR), para 11.i.(5)].

2.8.1.3 Method

All maintenance operations required during the testing were performed by operators/mechanics in accordance with the applicable maintenance manuals, using tools normally available at the level of maintenance specified. Preventive maintenance tasks were performed at the intervals specified; corrective maintenance was limited to that required to keep the vehicle operational. All organizational and DS/GS maintenance operations were monitored to accumulate the required data; the operator's daily checks and services were observed sufficiently to obtain a representative time to perform these tasks. The computer-based automatic data processing system was used in the collection and processing of all maintenance-related reliability data. The following data were recorded:

a. Each scheduled and unscheduled maintenance action, actual maintenance tasks performed, total man-hours expended, number of mechanics used, and total downtime in clock hours for each level of maintenance.

b. At the time of each malfunction: identification of the failed component or assembly, the availability and cost (if known) of the failed item, the accumulated operating time (hours and miles) of the test item/system, the life (hours and miles) of the failed component, and the conditions under which the maintenance action was performed.

c. Identification of all parts repaired or replaced by noun nomenclature, national stock number, functional group number, part number, or the manufacturer's part number.

d. During each maintenance action: notes on the adequacy of tools and TMDE, equipment publications, and repair parts used.

e. The time required to perform driver/crew checks and services.

f. Who performed the maintenance: military or civilian mechanics.

g. Reasons for any substantial differences in maintenance times for the same maintenance actions.

h. Vehicle operational mode at the time of malfunction.

2.8.1.3.1 Analytical Method

Analytical methods and calculation procedures for quantifying M are contained in MIL-HDBK-472, "Maintainability Prediction"; MIL-STD-471, "Maintainability Demonstration"; DA Pamphlet 705-1, "Maintainability Engineer"; MIL-STD-721B, "Definition of Terms for RAM, Human Factors and Safety"; and AR 702-d, "Army RAM." All data generated during preventive and corrective maintenance operations in support of the test items during testing were entered on Maintenance Analysis and Parts Charts in accordance with the procedures of TECOM Supplement 1 to AR 750-1. The accumulated data were used to compute the following average maintainability indices for comparison to the criteria:

a. Operator Daily Services and Inspections. These were computed separately for before- and after-operation checks and services by dividing the total time in minutes for all checks and services by the number of daily checks and services.

b. Frequency of Scheduled Maintenance Actions (FSMA):

$$\text{FSMA} = \frac{\text{Total operating hours up to last scheduled action}}{\text{Number of scheduled actions}}$$

c. Duration of Scheduled Maintenance Actions (DSMA):

$$\text{DSMA} = \frac{\text{Total active maintenance time (man-hours) for all scheduled actions}}{\text{Number of scheduled actions}} .$$

d. Maintenance Ratio (MR). Computed for each level of maintenance, including overall MR not to include GS maintenance:

$$\text{MR} = \frac{\text{Total active maintenance man-hours}}{\text{Total operating test time}}$$

e. If any of the maintainability criteria were not met using the above procedures, the maintenance operations required during testing were reviewed to determine the areas that most significantly affect overall maintainability. The following computations were also made to help define the test item maintainability characteristics:

(1) Achieved Availability (Aa)

$$\text{Aa} = \frac{\text{Total operating test time}}{\text{Total operating test time + total active corrective maintenance (unscheduled) + total active preventive maintenance (scheduled)}}$$

(2) Mean Time to Repair (MTTR). Computed for each level of maintenance, including overall MTTR:

$$\text{MTTR} = \frac{\text{Corrective maintenance clock hours}}{\text{Number of malfunctions which required corrective maintenance}}.$$

(3) Probability of Organizational Repair (P):

$$P = \frac{\text{Number of organizational corrective maintenance tasks}}{\text{Total number of organizational, DS, and GS corrective maintenance tasks}}.$$

(4) Maximum Time to Repair ($M_{max_{ct}}$). Computed for each level of maintenance, including overall $M_{max_{ct}}$.

$M_{max_{ct}}$ = Time that below which 95% of all corrective maintenance tasks are completed.

For exponential distributions of MTTR,

$M_{max_{ct}}$ (95%) = 3 (MTTR).

2.8.1.4 Results

a. Breakdown of Maintenance Times

A record of failed components and assemblies and accumulated operating times of the test item and failed components at the time of failure is in Appendix D. A summary of maintenance actions follows:

(1) Power Section T935 (Total Hours) and Dumper T936

Maint Level	Type of Maint	Clock Hours T935	Clock Hours T936	Man-hours T935	Man-hours T936
Crew	Sch	14.2	4.4	21.0	5.5
	Unsch	9.5	2.2	13.1	2.2
Org	Sch	27.2	12.1	44.2	17.5
	Unsch	77.7	12.6	126.4	16.6
DS	Sch	0	0	0	0
	Unsch	71.5	3.1	120.5	6.2
GS	Sch	0	0	0	0
	Unsch	0	0	0	0

(2) Power Section T935 and Dumper T942

Maint Level	Type of Maint	Clock Hours T935	Clock Hours T942	Man-hours T935	Man-hours T942
Crew	Sch	0	0.2	0	0.2
	Unsch	0.4	0.7	0.4	0.7
Org	Sch	0	0	0	0
	Unsch	22.6	2.6	28.0	2.9
DS	Sch	0	0	0	0
	Unsch	55.2	0	98.6	0
GS	Sch	0	0	0	0
	Unsch	0	0	0	0

(3) Power Section T959 and Dumper T960

Maint Level	Type of Maint	Clock Hours T959	Clock Hours T960	Man-hours T959	Man-hours T960
Crew	Sch	3.1	2.5	5.5	4.2
	Unsch	1.8	0.1	1.8	0.1
Org	Sch	0.9	0.7	1.8	0.7
	Unsch	13.8	2.4	9.9	18.0
DS	Sch	0	0	0	0
	Unsch	21.8	0	44.8	0
GS	Sch	0	0	0	0
	Unsch	0	0	0	0

(4) Power Section T937 and Loader T966

Maint Level	Type of Maint	Clock Hours T937	Clock Hours T966	Man-hours T937	Man-hours T966
Crew	Sch	14.3	12.9	29.7	22.0
	Unsch	5.7	6.3	5.7	10.2
Org	Sch	21.3	3.9	38.3	6.1
	Unsch	86.5	16.3	148.1	22.8
DS	Sch	0	0	0	0
	Unsch	10.9	2.0	21.1	2.0
GS	Sch	0	0	0	0
	Unsch	0	0	0	0

(5) Power Section T939 and Grader T940

Maint Level	Type of Maint	Clock Hours T939	Clock Hours T940	Man-hours T939	Man-hours T940
Crew	Sch	6.5	6.0	11.0	11.6
	Unsch	7.5	6.9	9.7	12.7
Org	Sch	17.3	1.4	24.8	2.9
	Unsch	40.6	28.7	55.6	40.9
DS	Sch	0	0	0	0
	Unsch	24.2	24.9	42.1	32.8
GS	Sch	0	0	0	0
	Unsch	0	1.0	0	1.0

(6) Power Section T949 and Grader T950

Maint Level	Type of Maint	Clock Hours T949	Clock Hours T950	Man-hours T949	Man-hours T950
Crew	Sch	0.4	1.9	0.6	2.4
	Unsch	1.0	0.3	1.2	0.3
Org	Sch	10.5	4.1	13.6	5.5
	Unsch	1.7	7.8	3.0	14.4
DS	Sch	0	0	0	0
	Unsch	9.1	8.8	12.8	8.8
GS	Sch	0	0	0	0
	Unsch	0	0	0	0

(7) Power Section T943 and Dozer T944

Maint Level	Type of Maint	Clock Hours T943	Clock Hours T944	Man-hours T943	Man-hours T944
Crew	Sch	16.6	12.2	23.5	20.4
	Unsch	1.9	4.7	2.5	7.6
Org	Sch	6.4	6.9	12.0	11.7
	Unsch	40.1	11.0	51.1	11.0
DS	Sch	0	0	0	0
	Unsch	20.5	0	41.0	0
GS	Sch	0	0	0	0
	Unsch	0	0	0	0

(8) Power Section T955 and Scraper T956

Maint Level	Type of Maint	Clock Hours T955	Clock Hours T956	Man-hours T955	Man-hours T956
Crew	Sch	3.5	4.6	7.6	10.2
	Unsch	1.3	0.5	1.3	0.8
Org	Sch	0.7	0.5	2.1	1.0
	Unsch	6.4	15.5	8.1	19.2
DS	Sch	0	0	0	0
	Unsch	20.0	11.2	51.5	19.4
GS	Sch	0	0	0	0
	Unsch	0	0.2	0	0.2

(9) Power Section T941 and Distributor T938

Maint Level	Type of Maint	Clock Hours T941	Clock Hours T938	Man-hours T941	Man-hours T938
Crew	Sch	10.1	4.2	21.4	7.9
	Unsch	4.4	2.9	5.0	4.3
Org	Sch	9.3	2.7	12.9	4.7
	Unsch	49.3	6.1	76.8	6.0
DS	Sch	0	0	0	0
	Unsch	28.9	13.2	60.5	22.6
GS	Sch	0	0	0	0
	Unsch	0	0	0	0

(10) Power Section T957 and Distributor T958

Maint Level	Type of Maint	Clock Hours T957	Clock Hours T958	Man-hours T957	Man-hours T958
Crew	Sch	1.5	0.8	3.3	1.4
	Unsch	0.9	0.1	1.1	0.1
Org	Sch	0.7	0.3	1.2	0.6
	Unsch	0.5	1.2	0.6	2.9
DS	Sch	0	0	0	0
	Unsch	2.1	3.5	3.6	5.9
GS	Sch	0	0	0	0
	Unsch	0	2.0	0	4.0

(11) Power Section T951 and Tamping-Foot Compactor T952

Maint Level	Type of Maint	Clock Hours T951	Clock Hours T952	Man-hours T951	Man-hours T952
Crew	Sch	2.1	1.3	4.2	2.2
	Unsch	1.4	4.1	1.4	4.1
Org	Sch	4.9	1.2	6.9	2.0
	Unsch	4.2	5.4	4.5	8.6
DS	Sch	0	0	0	0
	Unsch	0.3	0	0.3	0
GS	Sch	0	0	0	0
	Unsch	0	0	0	0

(12) Power Section T953 and Smooth-Drum Compactor T944

Maint Level	Type of Maint	Clock Hours T953	Clock Hours T954	Man-hours T953	Man-hours T954
Crew	Sch	2.9	1.3	5.7	2.6
	Unsch	0.4	0.7	0.4	0.7
Org	Sch	4.4	1.0	5.5	1.5
	Unsch	4.3	3.9	4.6	4.4
DS	Sch	0	0	0	0
	Unsch	7.0	1.4	7.0	1.4
GS	Sch	0	0	0	0
	Unsch	0	0	0	0

b. Summary of Maintenance Data

(1) Test Sections T935, T936, and T942

(a) $FSMA = \frac{913.8}{5} = 182.76$

(b) $DSMA = \frac{61.7}{5} = 12.34$

FSMA and DSMA values are calculated only for 250-hour scheduled maintenance.

(c) The MRs by level are as follows

Level	MR
Crew	0.034
Org	0.166
DS	0.102
GS	0
Overall	0.308

(d) $A_a = 1247/(1247 + 240.4) = 0.838$

(e) MTTR by level is as follows:

Level	SF[1]	UAM[2]
Crew	0.9	0.3
Org	1.1	1.2
DS	9.3	8.3
GS	0	0
Overall	2.0	1.5

(f) P = 39/124 = 0.315

(g) $M_{max_{ct}}$ by level is as follows:

Level	SF	UAM
Crew	2.7	0.9
Org	3.3	3.6
DS	27.9	24.9
GS	0	0
Overall	6.0	4.5

[1] SF — system failure

[2] UAM — unscheduled active maintenance

(2) Test Sections T959 and T960

(a) FSMA = $\frac{371}{1}$ = 371

(b) DSMA = $\frac{1.6}{1}$ = 1.6

(c) The MRs by level are as follows:

Level	MR
Crew	0.031
Org	0.065
DS	0.120
GS	0
Overall	0.216

(d) A_a = 374/(374 + 47.1) = 0.888

(e) MTTR by level is as follows:

Level	SF	UAM
Crew	0.1	0.2
Org	0.9	1.0
DS	7.1	5.5
GS	0	0
Overall	1.9	1.2

(f) P = 17/21 = 0.809

(g) $M_{max_{ct}}$ by level is as follows:

Level	SF	UAM
Crew	0.3	0.6
Org	2.7	3.0
DS	21.3	16.5
GS	0	0
Overall	5.7	3.6

(3) Test Sections T937 and T966

(a) $FSMA = \frac{924}{3} = 308$

(b) $DSMA = \frac{25.2}{3} = 8.4$

(c) The MRs by level are as follows:

Level	MR
Crew	0.072
Org	0.230
DS	0.025
GS	0
Overall	0.327

(d) $A\,a = 936/(936 + 180.1) = 0.839$

(e) MTTR by level is as follows:

Level	SF	UAM
Crew	0.9	0.3
Org	1.2	1.6
DS	3.2	4.3
GS	0	0
Overall	1.3	1.2

(f) $P = 64/67 = 0.955$

(g) $M_{max_{ct}}$ by level is as follows:

Level	SF	UAM
Crew	2.7	0.9
Org	3.6	4.8
DS	9.6	12.9
GS	0	0
Overall	3.9	3.6

(4) Test Sections T939 and T940

(a) $FSMA = \frac{755.8}{3} = 251.9$

(b) $DSMA = \frac{27.7}{3} = 9.23$

(c) The MRs by level are as follows:

Level	MR
Crew	0.058
Org	0.160
DS	0.097
GS	0.001
Overall	0.315

(d) $A_a = 776/(776 + 245.1) = 0.760$

(e) MTTR by level is as shown:

Level	SF	UAM
Crew	1.2	0.6
Org	0.8	1.1
DS	6.1	6.1
GS	1.0	0
Overall	1.4	1.4

(f) $P = 66/74 = 0.892$

(g) $M_{max_{ct}}$ by level is as follows:

Level	SF	UAM
Crew	3.6	1.8
Org	2.4	3.3
DS	18.3	18.3
GS	3.0	9.0
Overall	4.2	4.2

(5) Test Sections T949 and T950

(a) No scheduled Organizational Maintenance was performed.

(b) The MRs by level are as follows:

Level	MR
Crew	0.041
Org	0.332
DS	0.196
GS	0
Overall	0.569

(c) $A_a = 110/(110 + 50.5) = 0.685$

(d) MTTR by level is as follows:

Level	SF
Crew	0.117
Org	0.155
DS	2.462
GS	0
Overall	1.324

(e) $P = 6/25 = 0.240$

(f) $M_{max_{ct}}$ by level is as follows:

Level	SF
Crew	0.3
Org	0.6
DS	7.5
GS	0
Overall	3.9

(6) Test Sections T943 and T944

(a) FSMA = $\frac{724.3}{3}$ = 241.4

(b) DSMA = $\frac{20.2}{3}$ = 6.73

(c) The MRs by level are as follows:

Level	MR
Crew	0.045
Org	0.163
DS	0.055
GS	0
Overall	0.263

(d) A_a = 743/(743 + 107) = 0.874

(e) MTTR by level is as follows:

Level	SF	UAM
Crew	0.1	0.4
Org	1.2	1.3
DS	6.8	20.5
GS	0	0
Overall	1.5	1.4

(f) P = 38/39 = 0.974

(g) $M_{max_{ct}}$ by level is as follows:

Level	SF	UAM
Crew	0.3	1.2
Org	3.6	3.9
DS	20.4	61.5
GS	0	0
Overall	4.5	4.2

(7) Test Sections T955 and T956

(a) $FSMA = \frac{221.5}{1} = 221.5$

(b) $DSMA = \frac{3.1}{1} = 3.1$

(c) The MRs by level are as follows:

Level	MR
Crew	0.089
Org	0.136
DS	0.318
GS	0
Overall	0.544

(d) $A_a = 223/(223 + 64.2) = 0.776$

(e) MTTR by level is as follows:

Level	SF	UAM
Crew	0	0.3
Org	0.8	0.9
DS	3.8	5.2
GS	0	0
Overall	1.6	1.5

(f) $P = 24/30 = 0.8$

(g) $M_{max_{ct}}$ by level is as follows:

Level	SF	UAM
Crew	0	0.9
Org	2.4	2.7
DS	11.4	15.6
GS	0	0
Overall	4.8	4.5

(8) Test Sections T941 and T938

(a) $FSMA = \frac{777}{4} = 194.25$

(b) $DSMA = \frac{17.6}{4} = 4.4$

(c) The MRs by level are as follows:

Level	MR
Crew	0.047
Org	0.121
DS	0.100
GS	0
Overall	0.268

(d) $A_a = 830/(830 + 131.1) = 0.864$

(e) MTTR by level is as follows:

Level	SF	UAM
Crew	0.3	0.3
Org	1.3	1.6
DS	5.0	8.4
GS	0	0
Overall	1.7	1.7

(f) $P = 34/39 = 0.872$

(g) $M_{max_{ct}}$ by level is as follows:

Level	SF	UAM
Crew	0.9	0.9
Org	3.9	4.8
DS	15.0	25.2
GS	0	0
Overall	5.1	5.1

(9) Test Sections T957 and T958

(a) $FSMA = \frac{194.2}{1} = 194.2$

(b) $DSMA = \frac{1.8}{1} = 1.8$

(c) The MRs by level are as follows:

Level	MR
Crew	0.025
Org	0.022
DS	0.040
GS	0.017
Overall	0.087

(d) $A_a = 237/(237 + 13.6) = 0.946$

(e) MTTR by level is as follows:

Level	SF	UAM
Crew	0	0.2
Org	0.4	0.3
DS	1.4	1.4
GS	2.0	0
Overall	1.0	0.7

(f) $P = 5/9 = 0.556$

(g) $M_{max_{ct}}$ by level is as follows:

Level	SF	UAM
Crew	0	0.6
Org	1.2	0.9
DS	4.2	4.2
GS	6.0	0
Overall	3.0	2.1

(10) Test Sections T951 and T952

(a) $FSMA = \frac{236.3}{1} = 236.3$

(b) $DSMA = \frac{8.9}{1} = 8.9$

(c) The MRs by level are as follows:

Level	MR
Crew	0.041
Org	0.075
DS	0.001
GS	0
Overall	0.117

(d) $A_a = 293/(293 + 24.9) = 0.922$

(e) MTTR by level is as follows:

Level	SF	UAM
Crew	1.9	0.9
Org	0.4	0.7
DS	0.3	0.3
GS	0	0
Overall	0.6	0.8

(f) $P = 13/14 = 0.929$

(g) $M_{max_{ct}}$ by level is as follows:

Level	SF	UAM
Crew	5.7	2.7
Org	1.2	2.1
DS	0.9	0.9
GS	0	0
Overall	1.8	2.4

(11) Test Sections T953 and T954

(a) $\text{FSMA} = \frac{237}{1} = 237$

(b) $\text{DSMA} = \frac{7.0}{1} = 7.0$

(c) The MRs by level are as follows:

Level	MR
Crew	0.040
Org	0.068
DS	0.035
GS	0
Overall	0.143

(d) $A_a = 237/(237 + 33.8) = 0.875$

(e) MTTR by level is as follows:

Level	SF	UAM
Crew	0.2	0.3
Org	0.5	0.6
DS	3.6	4.2
GS	0	0
Overall	0.8	0.9

(f) P = 13/15 = 0.867

(g) $M_{max_{ct}}$ by level is as follows:

Level	SF	UAM
Crew	0.6	0.9
Org	1.5	1.8
DS	4.8	12.6
GS	0	0
Overall	2.4	2.7

2.8.1.5 Analysis

Paragraph 2.8.1.4., Results, provides summaries of maintenance times and maintenance data. Analysis of the maintenance data shows that the maintenance test criteria were not met in all cases. The scheduled (250-hour) maintenance required more than 6.25 man-hours on an average for the following vehicles:

Vehicle	Average time for 250-hour maintenance (hours)
Dumper (T935/T936/T942)	12.34
Loader (T937/T966)	8.40
Grader (T939/T940)	9.23
Dozer (T943/T944)	6.73
T.F. Compactor (T951/T952)	8.90
S.D. Compactor (T953/T954)	7.00

Those vehicles that did not accumulate 250 test hours are as follows:

Vehicle	Accumulated test hours
Grader (T959/T950)	110
Scraper (T955/T956)	233
Distributor (T957/T958)	237

The only vehicle that clearly met the scheduled criteria was the Distributor (T941/T938) with an average of 4.4 hours for four scheduled actions. The Dumper (T959/T960), Scraper (T955/T956), and Distributor (T957/T958) met the test criteria with each only having one scheduled maintenance task.

The vehicles not meeting the required overall maintenance ratio of .30 are as follows:

Vehicle	Overall MR	Maintenance level where MR was exceeded
Dumper (T935/T936/T942)	0.308	C/F
Loader (T937/T966)	0.327	C/O
Grader (T939/T940)	0.315	C/F
Grader (T949/T950)	0.569	C/O/F
Scraper (T955/T956)	0.544	C/F

In only two cases was the overall maintenance ratio exceeded by more than 0.027. The Grader (T949/T950)

accumulated only 110 hours at MERADCOM. If Clark's test hours and maintenance data are included, the MR for the Grader (T949/T950) reduces to 0.17. The high MR for the Scraper can be partially attributed to the rear drive problem which took 36 man-hours for repair.

Further analysis of the data (Aa, MTTR, P, and $M_{max_{ct}}$), in general, shows that the MTTR and $M_{max_{ct}}$ for Direct-Support maintenance times was the primary contributor to high MR's.

2.8.2 Special Tools and Test Equipment

2.8.2.1 Objective

a. To identify and evaluate tools and TMDE necessary for maintenance of the vehicle.

b. To evaluate the tools and TMDE only in areas where actual maintenance is performed.

2.8.2.2 Criteria

a. (Essential) Design automotive components to be compatible with internal and external automatic test equipment (ATE) (MN(ED) (QMR), para 11c).

b. (Essential) High mortality parts that do not require component disassembly and those designed to fail when overloaded shall be easily accessible and rapidly replaceable by the operator using only OEM tools (MN(ED) (QMR), para 11h).

c. (Desirable) Design of the family of equipment shall facilitate maintenance accessibility in a field environment at all categories of maintenance, so that required maintenance will be performed in the minimum practicable time with a minimum variety of tools and test equipment (MN(ED) (QMR), para 11a).

2.8.2.3 Method

a. All maintenance operations required during the testing were performed by operators/mechanics in accordance with the applicable maintenance manuals. Preventive-maintenance tasks were performed at the intervals specified; corrective maintenance was limited to that required to keep the vehicle operational. All organizational and DS/GS maintenance operations were monitored to accumulate the required data; the operator's daily checks and services were observed sufficiently to obtain a representative time to perform these tasks.

b. Each special tool or item of the test equipment issued in support of the test item was examined. Maintenance operations for which special tools and test equipment were intended were performed as required to keep the test items operational. The special tools and test equipment not routinely used to keep the test items operational were examined visually. Where instructions were provided for the fabrication of tools and equipment, only those tools and equipment needed for actual maintenance were fabricated. Test results were used to compile a record of all special

tools and test equipment (i.e., Test, Measurement, and Diagnostic Equipment (TMDE)) which were used to perform a task. These tools and TMDE are listed in Table 2.8-1. Instructions for the tools and equipment not fabricated were reviewed and commented on. The following were investigated:

(1) The feasibility of substituting common tools and test equipment that are already in the Army inventory for special tools and test equipment.

(2) The essentiality of the special tools and test equipment that are furnished.

(3) The essentiality of special tools that require fabrication.

c. Comments pertaining to the adequacy of each special tool or TMDE to perform the intended function will be recorded.

2.8.2.4 Results

a. In the initial maintenance test support package, no special tools were provided. Eleven special tools were provided on 5 August. The maintenance evaluation conducted at the contractor's facility determined that the 16 special tools identified prior to the evaluation were required. Of the 16 special tools, 10 can be field fabricated according to the technical manuals.

b. As the test progressed, additional special tools (identified by "*" in Table 2.8-1) were required to perform the necessary maintenance functions.

c. At the end of the test, 19 special tools had been required, including the 16 identified in the maintenance evaluation.

d. A 300-lb/in^2 gauge and a multimeter were required at the organizational level.

2.8.2.5 Analysis

a. The MTSP was deficient in special tools and TMDE area in that these items were not all provided for the test start.

b. The basic requirements of the test criteria of paragraph 2.8.2.2 are met. However, some tools and diagnostic equipment were required that had not been identified as essential.

Table 2.8-1. Tools and TDME

Description	NSN or Part No.	Maint Level O - Org F - Direct H - General	Required Yes or No
Special Tools			
Tube, expanding tool	943374	F	Yes
Wrench, spindle nut	945940	F/H	Yes
Tool - 16 Male-half assembly	2544260	H	Yes
Tool - 20 Male-half assembly	2544261	H	Yes
Socket - Special flange nut	2544746	H	Yes
Wrench - Combination, coupler header bolts	2544747	F	Yes
Driver - Oil seal hub	2544748	H	Yes
Adapter, Torque wrench	2544749	F	Yes
Space - Between flange and flange retaining tool	2544750	H	Yes
Tube - Driver, bearing cup into hub	2544751	H	Yes
Tube - Driver, bearing cup into pinion bearing cage	2544752	H	Yes
Tube - Driver, bearing cone into internal gear and hub	2544753	H	Yes
Tube - Driver, bearing cup into pinion bearing cage	2544754	H	Yes
Tube - Driver, differential bearing cones on case halves	2544755	H	Yes
Tube - Driver, bearing cup into hub	2544756	H	Yes
Tube - Driver, inner pinion bearing on pinion	2544757	H	Yes
Extraction tool, 1-1/4 crows-foot*			Yes
Oil filter corrosion resistor wrench*			Yes
Valve stem extension device*			Yes

* Additional special tools required.

Table 2.8-1. Tools and TMDE (Continued)

Description	NSN or Part No.	Maint Level O - Org F - Direct H - General	Required Yes or No
Common Tools/TMDE			
Tool kit, general mechanics automotive	5180-00-177-7033	O	Yes
Shop equipment automotive maintenance and repair: organizational maintenance common No. 1 less power	4910-00-754-0654	O	Yes
Shop equipment automotive maintenance and repair: organizational maintenance supplement No. 1 less power	4910-00-754-0653	O	Yes
Shop equipment automotive maintenance and repair: field maintenance, basic less power	4910-00-754-0750	F/H	Yes
Tool kit automotive fuel and electrical system repair	4910-00-754-0655	F/H	Yes
Shop equipment, automotive maintenance and repair: field maintenance, supplement No. 1 less power	4910-00-754-0706	F/H	Yes
300-Lb/in^2 gage		O	Yes
Shop equipment general-purpose repair, semitrailer-mounted	4940-00-287-4894	F/H	Yes

2.8.3 Equipment Publications

The equipment publications were evaluated for adequacy and content during all aspects of the test.

2.8.3.1 Objective

To determine all essential operating and maintenance functions, whether the repair parts and special tool lists are adequate, and whether the lubrication order is adequate and compatible with the PMCS.

2.8.3.2 Criteria

None.

2.8.3.3 Method

Throughout the testing, the equipment publications provided in the maintenance test support package accompanying the test item were reviewed for accuracy and adequacy and were compared with the test item. Manual changes were reported by EPR. The publications were also compared with the regulations and military standards prescribing the format, content, and standards for military publications. The publications were checked for simplicity, clarity, and completeness; checks included:

a. Level of operating and maintenance instructions relative to the training and skill of the operator/repairman.

b. Simplicity, clarity, sequence, and completeness of instructions.

c. Adequacy of the safety instructions.

d. Adequacy of instructions on use of tools and test equipment.

e. Adequacy of the repair parts list, special tools list, and MAC.

f. Format deficiencies.

2.8.3.4 Results

a. Twenty publications were required for use during test. Nineteen of these contained RPSTL's. All of these manuals were provided for test but were not identified in the MTSP list.

b. The publications contained such discrepancies as incomplete or inaccurate lube orders, drawings, MAC's,

procedures, and RPSTL's. A summary of the adequacy of the manual is included in Table 2.8-2.

c. Numerous changes and additions to the initial manuals, provided at the start of test, were made during the course of the test.

d. A listing of the manuals provided for DT II is shown in Table 2.8-3.

2.8.3.5 Analysis

a. MN criteria were not established for the equipment publications.

b. The results indicate that the publications did not always reflect the equipment. However, continual ongoing changes in the manuals may have corrected many of the inadequacies noted during the test.

Table 2.8-2. Adequacy of Equipment Publications

Test Item	Instructions	Adequacy of Publication When Compared With Test Item and Applicable Specifications									Comments
		Skill Level	Format	Simplicity, Clarity	Completeness	Accuracy	Safety	MAC	Repair Parts List	Tool Lists	
Power Section	Oper	#	#	#			#				Not all repair parts are identified. Maint of air governor missing. Illus not clear. Maint of elec incomplete.
	Maint	#	#	#	X	X	#	X	X	X	
Dozer	Oper	#	#	#			#				Parts are not shown in manuals.
	Maint	#	#	#	X		#	#	X	#	
Loader	Oper	#	#	#			#				MAC does not cover coolant hoses. Parts located differently than depicted.
	Maint	#	#	#	X	X	#	#	X	#	
Dumper	Oper	#	#	#			#				Installation of activator not covered. Lube order incomplete. Adjustment procedures not covered.
	Maint	#	#	#	X	X	#	#	X	#	
Distributor	Oper	#	#	#	X		#				Does not include information for removing water pump.
	Maint	#	#	#	X		#	#	X	#	

Table 2.8-2. Adequacy of Equipment Publications (Continued)

Test Item	Instructions	Adequacy of Publication When Compared With Test Item and Applicable Specifications									Comments
		Skill Level	Format	Simplicity, Clarity	Completeness	Accuracy	Safety	MAC	Repair Parts List	Tool Lists	
Scraper	Oper	#	#	#			#				Not all repair parts are identified. Illus missing. Maint of hydrostatic drive incomplete.
	Maint	#	#	#	X		#	#	X	#	
Grader	Oper	#	#	#			#				Not all repair parts are identified. Illus of transfer case & disconnect lever incomplete.
	Maint	#	#	#	X	X	#	#	X	#	
Compactor (SD)	Oper	#	#	#			#				Not all repair parts are identified. Illus missing.
	Maint	#	#	#	X		#	#	X	#	
Compactor (TF)	Oper	#	#	#			#				Not all repair parts are identified. Illus missing. Incorrect procedures.
	Maint	#	#	#	X	X	#	#	X	#	

Legend: Oper = Operating, Maint = Maintenance; # = Adequate, X = Inadequate.

Table 2.8-3. Equipment Publications Provided for DT II

DEP No.		Organizational	Support	Short Title
5-	-200-10	X		Operator's Manual
5-	-201-20&P	X		Power Section
5-	-201-34&P1		X	Power Section
5-	-201-34&P2		X	Power Section
5-	-202-20&P	X		Dozer Section
5-	-202-34&P		X	Dozer Section
5-	-203-20&P	X		Loader Section
5-	-203-34&P		X	Loader Section
5-	-204-20&P	X		Grader Section
5-	-204-34&P		X	Grader Section
5-	-205-20&P	X		Scraper Section
5-	-205-34&P		X	Scraper Section
5-	-206-20&P	X		Smooth-Drum Compactor
5-	-206-34&P		X	Smooth-Drum Compactor
5-	-207-20&P	X		Tamping-Foot Compactor
5-	-207-34&P		X	Tamping-Foot Compactor
5-	-208-20&P	X		Dumper Section
5-	-208-34&P		X	Dumper Section
5-	-209-20&P	X		Distributor Section
5-	-209-34&P		X	Distributor Section

2.8.4 Repair Parts

2.8.4.1 Objective

To determine the technical adequacy and appropriateness of the repair parts for the test vehicles.

2.8.4.2 Criteria

These include:

a. (Essential) Maximize the utilization of the module concept of maintenance to enable "repair by replacement" [MN (ED)(QMR), para 11.b.].

b. (Desirable) Utilize only rapid-exchange (i.e., plug-in/plug-out or twist-in/twist-out) components [MN (ED) (QMR), para 11.f.].

c. (Essential) Utilize throwaway items whenever feasible to reduce maintenance effort on expendable items [MN (ED)(QMR), para 11.h.].

d. (Desirable) Design the family of equipment to facilitate maintenance accessibility in a field environment at all categories of maintenance so that required maintenance will be performed in the minimum practicable time with a minimum degree of skill, variety of tools, test equipment, and other supplies [MN (ED)(QMR), para 11.a.].

2.8.4.3 Method

The repair parts usage was monitored throughout testing. All maintenance operations were observed, and difficulties in installation, alignment, and interchangeability of repair parts were noted. Data for repair parts included:

a. A record of difficulties in installation, alignment, and interchangeability of repair parts.

b. A list of repair parts that are replaceable with common parts.

c. A list of repair parts that are replaced, by noun nomenclature, National Stock Number, and/or manufacturer's part number.

d. A list of repair parts received but not used, and a list of the parts required but not furnished in the maintenance test package.

e. A record of repair parts listed in Draft Equipment Publications (DEP's) that are not compatible with the test item or are not prescribed at the correct maintenance level.

2.8.4.4 Results

A total of 41 repair parts that were required were not provided as part of the MTSP or were provided in insufficient quantities (Table 2.8-4).

2.8.4.5 Analysis

The criteria established were not met. Some parts were difficult to utilize and some required slight modifications. As indicated in the results, parts were not available when required for repair. The maintenance task log printout, Appendix D, identifies difficulties in installation, alignment, and interchangeability of repair parts. Also, the task log identifies repair parts that were replaced by noun nomenclature, National Stock Number, and/or manufacturer's part number.

Table 2.8-4. Components Not Available When Needed for Repair of Test Item

Item	Component
Power Section	Control-valve solenoid
	Gear lever
	Fire extinguisher
	Axle stop
	Dip stick
	Alternator belt
	Control cable
	Actuator control cable
	Roll pin
	Windshield vision panel
	Alternator belts
	Fuel pump
	Mirror mounting bracket
	Mirror mounting arm assembly
	Emergency parking brake handle
	Dummy manifold
	Horn solenoid
	Windshield wiper speed control
	Engine coolant warning light
	Torque converter warning light
Grader	Hydraulic steering line
	Hose assembly
	Control cable pin
	Pivot bracket
	Pivot pin
	Hydraulic manifold "O" ring
Distributor	Spray head
	Manhole cover latches
Scraper	None
Dozer	Rod-end assembly
	Pivot pin
	Mud flap
	Teeth
Dumper	Master cylinder filter
	Control valve
	Pressure valve
	O-ring
	Control rod
	Quick-release pin
	Quick-release pin

Table 2.8-4. Components Not Available When Needed for Repair of Test Item (Continued)

Item	Component
Compactor (SD)	None
Loader	Bucket teeth Plunger arm
Compactor (TF)	None

2.8.5 Design for Maintainability

2.8.5.1 Objective

To determine whether the test item meets the maintainability design requirements and adheres to good maintainability design principles.

2.8.5.2 Criteria

These include:

a. (Desirable) Design the family of equipment to facilitate maintenance accessibility in a field environment at all categories of maintenance, so that the required maintenance will be performed in the minimum practicable time with a minimum degree of skill [MN (ED)(QMR), para 11.a.].

b. (Essential) Design to prevent malfunctioning and damage to controls and linkage due to freezing, dirt, and mud accumulation [MN (ED)(QMR), para 11.e.].

c. (Essential) High-mortality parts that do not require component disassembly and those parts designed to fail when overloaded shall be easily accessible and rapidly replaced by the operator using only OEM tools [MN (ED)(QMR, para 11.h.].

d. (Essential) Sealed, self-lubricating, or dry-type bearings will be used in locations on equipment not accessible for lubrication. (Desirable.) Maximum use will be made of these devices [MN (ED)(QMR, para 11.d.].

e. (Essential) Engine accessories such as starter motor, generators, injector pump, fuel pump, turbocharger and similar items, must be easily accessible for repair and/or replacement at the organizational level [MN (ED)(QMR, para 11.1.].

2.8.5.3 Method

The maintenance operations were monitored continuously to note factors pertaining to ease of maintenance. The test item was examined for adherence to good maintainability design principles. Those operator and scheduled organizational preventive maintenance services that are required during the test (for the test items and the comparison equipment) were performed. Unscheduled organizational maintenance operations, direct-support maintenance operations, and general-support maintenance operations were performed as required to keep the test items operational. These include:

AD-A068 978 ARMY MOBILITY EQUIPMENT RESEARCH AND DEVELOPMENT COMM--ETC F/G 13/3
FAMILY OF MILITARY ENGINEER CONSTRUCTION EQUIPMENT (FAMECE) PRO--ETC(U)
MAR 79 A B FOLLANSBEE, R T EILER, C W HASLE

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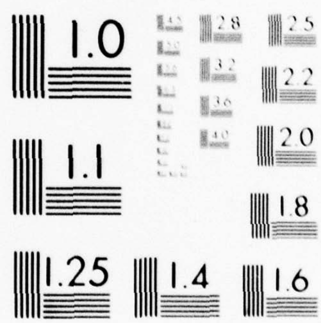

MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

a. A record of commments on design considerations for ease of access to components and test points and the use of modular construction, simple fault-isolation indicators, and protective devices to prevent damage during maintenance of the test items.

b. A record of comments on design considerations for ease of maintenance, maximum utilization of interchangeable and throwaway components, minimization of maintenance and supply, compatibility of maintenance operations with common tools, and easy removal of major components and individual units of the test items.

c. A record of the time required for all services and maintenance operations performed on the test items.

2.8.5.4 Results

a. A record of the time required for all services and maintenance operations performed on the test item is in the maintenance printout, Appendix D.

b. Design characteristics and components which adversely affected maintenance operations or generated excessive maintenance or supply requirements and maintenance tasks and operations that required excessive time to perform are described below:

(1) Power section cover retaining bolts — difficult access; task requires two people.

(2) Master cylinder on power units — inaccessible; step plate must be removed for access.

(3) Water distributor side suction hose — difficult to remove.

(4) Grader blade movement — no stops; causes damages to hoses, air manifold dust cover assembly, and front drive clutch assembly.

(5) Power and work section — occasionally difficult to uncouple/couple; requires excessive time (greater than 30 minutes). (See paragraph 2.5, "ENDURANCE (PQT-G) TESTING," for further description.)

(6) Steering valve — difficult to repair and remove; access panel would expedite repair.

(7) Vulnerability of components to damage (see Table 2.8-5).

Table 2.8-5. Vulnerability of Components to Damage When Working in Wooded Areas and Rough Terrain

Test Item	Component Affected	Incident and Result
Dozer	Automatic Drain Valves Fenders Head Guard for Lights Air System Rear Glad Hands	Clearing trees and brush. Damage was result of hitting trees and stumps. (The operator could not always see the stumps in the thick brush.) The damage to the air system glad hand and drain valve resulted in the automatic setting of the brakes; vehicle had to be towed from site.
Loader	Radiator Guard Radiator Fins Service Glad Hand Automatic Drain Valves Fuel Tank Mounting Bracket Engine Hood	These items were damaged while working in the sanitary-fill area on post. The operator backed over a tree, and as he moved forward, the tree sprang back, hitting the vehicle.
	Fuel Tank Engine Access Panels	Loading dumper in wooded area on post. Operator backed into bank, shoving fuel tank against tire.
Dumper	Automatic Drain Valve	Operator backed over boulder, knocking off the automatic drain valve. Resulted in automatic setting of the brakes.
	Taillights	Right rear taillight pushed in and partially filled with dirt. Vehicle was stockpiling at time of incident.

2.8.5.5 Analysis

The criteria established in paragraph 2.8.5.2 were not met. Accessibility to some parts was difficult. Design in some areas caused excessive wear of components. Table 2.8-5 identifies those vulnerable components which contributed to unnecessary maintenance actions/hours.

2.8.6 Safety Aspects of Maintenance Operations

2.8.6.1 Objective

To determine if the test item incorporates safety features that allow maintenance operations to be performed without injury to personnel or damage to the test item.

2.8.6.2 Criteria

(Essential) Safety engineering criteria. The family of equipment will be designed in accordance with safety engineering principles to provide the maximum degree of safety to operator, maintenance personnel, and equipment during all phases of development, test, and field utilization. The appropriate safety engineering requirements of AR 385-16 and MIL-STD-882 are applicable [MN (ED)(QMR), para 12.b.].

2.8.6.3 Method

The safety aspects of all maintenance functions performed throughout the test were observed. Safety inspections were performed and the findings recorded. These inspections to check for the required guards and the adequacy of warning and instruction plates included:

a. A record of comments on the lack of adequate or inoperable safety features.

b. A record of notes of inadequate and/or poorly located warning and instruction plates.

c. A record of any hazardous conditions encountered while performing required maintenance actions.

d. A record of the use of toxic materials for service or maintenance.

2.8.6.4 Results

The only safety aspect of the maintenance operations was ease with which the hood brace can be bumped, releasing the hood. The hood fell on a mechanic during a repair function. A later modification by the contractor attempted to correct this, however, the effectiveness of the modification was not proved conclusively.

2.8.6.5 Analysis

The criteria established in paragraph 2.8.6.2 were met with the exception of the hood brace. The hood brace should

be designed so as to make repair under the hood safer. Paragraph 2.6, "SAFETY ANALYSIS," contains additional information concerning safety aspects in general.

2.8.7 Human Factors Aspects of Maintenance Operations

2.8.7.1 Objective

To determine the degree of compatibility between maintenance personnel and test item.

2.8.7.2 Criteria

(Essential) The family of equipment shall be designed in accordance with sound human factors, sound engineering principles, and in conformity with the following standards:

a. MIL-STD-1472A,"Human Engineering Requirements for Military Systems, Equipment and Facilities."

b. MIL-H-46855,"Human Engineering Requirements for Military Systems, Equipment and Facilities."

c. USAHEL STD S-6-66,"Design Standards for Wheeled Vehicles."

d. MIL-STD-1474,"Noise Limits for Army Materiel."

2.8.7.3 Method

Repairmen were observed and interviewed to obtain the bulk of the required data. Any data lending itself to quantitative measurement were also obtained. The accumulated data consisted of:

a. Adequacy of hoisting, lifting, and towing facilities.

b. Ease of operations.

c. Physical effort required for performance of duties.

d. Adequacy of working space.

e. Simplicity in servicing and performing maintenance duties.

f. Effects of engine fumes on mechanics.

2.8.7.4 Results

The human factor aspects of maintenance were as follows:

a. Hose assembly — difficult to remove because of hose thickness, stiffness, and resistance to bend; requires two men to install.

b. Control rod — excessive force required to move through point of component actuation.

c. Grease gun — very difficult for one individual to use; difficult to hold the extension on the fitting and apply pressure to the trigger.

2.8.7.5 Analysis

The human factor aspects of maintenance met the criteria of paragraphs 2.8.7.2.a through d. However, those items identified in paragraph 2.8.7.4 represent areas for improvements in human factor considerations.

2.9 RELIABILITY ANALYSIS

2.9.1 Objectives

a. To estimate mission and system MTBF of the power section, the work sections, and the combined power-and-work sections.

b. To present point estimates and 80% confidence intervals of the mission and system reliability for each power section, work section, and for the combined power-and-work sections.

2.9.2 Criteria

The FAMECE system shall have a minimum acceptable value (MAV) of MTBF comparable to existing military construction equipment. Current estimates of MAV and best operational capability (BOC) are 55 and 95 hours, respectively [MN (ED)(QMR, para 9. .(18)(a),(b)]. The typical mission duration for any member of the family will be 10 hours [MN (ED)(QMR), para 2.b.(1)].

2.9.3 Method

The FAMECE was tested in accordance with Appendices III to X of the PQT-G Test Plan, dated 25 October 1977. Scoring conferences were held at intervals throughout the testing period at which time incidents were scored against the FAMECE failure definition (see Appendix XV, PQT-G Test Plan). Equipment Performance Reports (EPRs) considered in this report FB-1 through FB-1118 from PQT-G testing from 29 July 1977 to 17 March 1978. Approximately 1200 hours of similar endurance testing performed by CEC is not included. All failures are included in this analysis regardless of whether or not they resulted in modifications or corrections to the equipment.

The vehicles were tested in various modes of operation in accordance with the mission profile in MN (ED)(QMR), paragraph 2.b.(2) as follows:

Item	Task Percentage (%)
Dozer	
Earthmoving (dozing)	60
Stockpiling	15
Push loading	5
Towing	5
Travel	10
Miscellaneous	5

Loader

Stockpiling	20
Earthmoving (loading)	65
Travel	10
Miscellaneous	5

Scraper

Earthmoving (scraping)	80
Hauling (construction materials)	5
Travel	10
Miscellaneous	5

Dumper

Towing	5
Earthmoving (hauling)	50
Hauling (construction materials and general cargo)	30
Travel (including transporting squad personnel and tools)	15

Grader

Road maintenance	50
Spreading and leveling fill	20
Ditching	10
Travel	10
Miscellaneous	10

Compactors (T.F. and S.D.)

Embankment compaction	30
Base course compaction	30
Asphalt compaction	10
Vibratory mode compaction	20
Travel	10

Distributor

Hauling water	35
Distributing water	55
Travel	10

This mission profile was followed as closely as possible during testing, but because of environmental conditions, safety, etc., slight deviations (e.g., water spraying operations during periods of freezing temperatures) were made. Exceptions are outlined in paragraph 2.5, "ENDURANCE (PQT-G) TESTING."

2.9.4 Data Collection

Data collectors at the testing sites maintained logbooks of all incidents, maintenance performed, and other relevant information related to each vehicle during testing. Data from these logbooks were then used to generate EPRs and Maintenance Task Logs (MTLs). The EPRs were used by the scoring conferees to assess incidents against the scoring criteria. The MTLs were added to a computer file to create a data base of all maintenance actions performed on the vehicles.

The following data were required for reliability analysis:

a. A record of all incidents (EPRs).

b. The testing agencies scoring determination including mission criticality factors (MCFs).

c. Operating hours for each section

2.9.5 Analysis

2.9.5.1 Reliability Parameters

Tables 2.9-1, 2.9-2, and 2.9-3 show the FAMECE failure data compared with three calculated reliability parameters: MTBF, reliability for a 10-hour mission, and 80% confidence intervals for the MTBF and reliability. As shown in the tables, three of the vehicles were tested an insufficient number of hours to give an adequate sampling. Failure data are divided into three groups: system failures, mission failures, and mission failures with MCFs applied. Each of these groups is arranged by power section, work section, and combined vehicles. A point estimate of MTBF is calculated for each piece of failure data as follows:

$$PE = \frac{T}{R}$$

Where:

PE = Point estimate of MTBF
T = Total operating time
R = Number of failures

Assuming that the time between failures follows the exponential distribution, point estimates of reliability for a 10-hour mission can be obtained using the calculated MTBF's:

$$R(10) = \exp - \frac{1}{MTBF} (T)$$

Where:

$R(10)$ = Reliability (probability of completing a 10-hour mission without failure)
T = Mission time = 10 hours

The MTBF's and reliabilities calculated previously are only point estimates of the true values for these parameters. Eighty percent confidence intervals have been calculated for the mission MTBF's and mission reliabilities. These are intervals which have an 80% probability of containing the true MTBF or reliability. The 80% confidence interval for MTBF is calculated as follows:

$$\frac{2r\ MTBF_p}{(X^2.1,\ 2r)} \leq MTBF_r \leq \frac{2r\ MTBF_p}{(X^2.9,\ 2r)}$$

Where:

r = Number of mission failures
$MTBF_R$ = Real MTBF
$MTBF_p$ = Point estimate of MTBF
$(X^2.1,\ 2r)$ = Value from X^2 distribution

A similar formula is used to obtain the 80% confidence interval for the reliability for a 10-hour mission:

$$\exp \frac{-5\ (X^2.1,\ 2r)}{r\ MTBF_p} \leq R(10) \leq \exp \frac{-5\ (X^2.9,\ 2r)}{r\ MTBF_p}$$

Where:

$R(10)$ = True reliability for a 10-hour mission

2.9.5.2 Pattern Failures

a. Power Sections

The following pattern failures were observed on most of the power sections throughout the test period:

(1) Dolly wheels drifting down. This was a problem until a gate valve was installed in the wheel hydraulic actuating system.

(2) Coupler ring seating. During operations, fine particles of dust and small stones became wedged in the ring, making uncoupling and coupling difficult.

(3) Transmission solenoid. A solenoid, part number 236402, used to control the transmission failed several times, leaving the vehicle immobile. Apparently, moisture inside the solenoid caused it to short circuit. An improved solenoid with a better seal was installed as each old one failed. Because they were not all replaced at the same time, it is difficult to determine if the new parts are adequate.

(4) Steering control valve. Several valves leaked hydraulic oil on the operator's feet. A CEC seal kit apparently solved the problem as valves failed.

(5) Fuel pump. Fuel pumps with cracks in the housings were replaced on several sections.

b. Work Sections with Power Sections

The following pattern failures were observed on the work sections and associated power sections during the testing period:

(1) Dumpers (T936, T960, T942). The quick-release pin on the tailgate often vibrated loose and fell out. The pin was replaced with a nut and bolt as a temporary "fix." At this time, the fix is considered a permanent modification.

The jam nut on the parking brake came loose twice on T936. There were three instances of the parking brake being out of adjustment on vehicles T936 and T960.

(2) Loader (T966). The bucket control rod broke on three occasions.

(3) Graders (T940, T950). A serious problem exists on the graders; the moldboard damaged surrounding parts on

many occasions because the operators could not see it. Air hoses, disconnet levers, air manifolds, and transfer case covers were damaged.

The service brakes were locking and dragging. Modifications and fixes were made but have not been proved.

There were numerous problems with hydraulic leaks on the graders involving hoses, fittings, and manifolds.

There were two instances on T940 of the rear axle stop breaking at the weld, causing the grader to tilt to the left.

There were two instances on T940 of the moldboard developing a crack.

(4) Distributors (T938, T958). There were no apparent pattern failures with the distributor work sections. On associated power section T941, there were three cases of the parking brake coming out of adjustment and two cases of the fan-hub adjusting-screw breaking or becoming loose.

(5) Dozers (T944, T946). There were two failures of the adjustable tilt link on T944. One involved the thread rod bending; the other involved the adjustable tilt link unwinding, thus damaging the bushings.

There were two incidents where the mechanics inadvertently switched two air hoses on the midmount pnematic actuator. The manual does not indicate where each hose is supposed to be placed.

Failures were charged twice to T944 when the end bits were worn and no replacements were available.

(6) Scrapers (T948, T956). Nine out of 31 system failures for scraper T948 can be attributed to problems with the hydraulic drive system. There were instances where hoses and cap screws vibrated loose causing leaks, and one instance where the pump actuator adjustment screw vibrated loose causing the loss of power to the scraper wheels.

The ejector roller mount weld failed on two occasions.

(7) T.F. Compactor (T951, T952). The power section used with T951 had hydraulic leaks in the area of the bypass valve. There were three failures of a section of flared tubing and three failures of a hose on the valve.

There were occasions when the plates on the cleaner bars came off. Apparently, the plates vibrate loose and the tamping feet knock them off.

(8) S.D. Compactor (T954). The straps on the drum leaf springs failed at their welds on three occasions.

There were two instances of cap screws coming loose around the drum assembly. Apparently, this is caused by vibrations when the vehicle is operating in the vibratory mode.

The tire scraper blade locking arm broke off on two occasions. The locking arm has too much free play and bounces out of the "disengage" position.

Pattern and single-incident failures are discussed in detail in Appendix C, arranaged as major and minor incidents.

Table 2.9-1. Vehicle System/Mission Failures

Vehicle Type	Power Section	Work Section	MERADCOM Test Hours	Failures: System P.S.	System W.S.	System Veh.	Mission P.S.	Mission W.S.	Mission Veh.	Mission w/MCF P.S.	Mission w/MCF W.S.	Mission w/MCF Veh.
Dumper I	T935	T936	1047	48	12	60	18	3	21	18	2.5	20.5
Loader	T937	T966	936	54	19	73	21	7	28	20.5	5.5	26
Grader I	T939	T940	776	38	35	73	13	15	28	11.5	14.5	26
Distributor I	T941	T938	830	41	7	48	13	4	17	13	3	16
Dozer I	T943	T944	743	28	13	41	11	6	17	11	6	17
Dozer II	T945	T946	* 0	**	**	**	**	**	**	**	**	**
Scraper I	T947	T948	* 0	**	**	**	**	**	**	**	**	**
Grader II	T949	T950	110	5	6	11	2	4	6	2	4	6
T.F. Compactor	T951	T952	293	13	9	22	2	1	3	2	1	3
S.D. Compactor	T953	T954	273	5	14	19	3	1	4	3	0.5	3.5
Scraper II	T955	T956	230	16	14	30	5	6	11	5	5.5	10.5
Distributor II	T957	T958	237	4	5	9	3	4	7	3	3.5	6.5
Dumper II	T959	T960	374	14	3	17	5	1	6	5	0.5	5.5
Dumper III	T935	T942	200	18	2	20	4	1	5	3.5	0.5	4

MCF - Mission Criticality Factors
P.S. - Power Section; W.S. - Work Section; Veh. - Vehicle
* Not tested at MERADCOM.
** Insufficient hours to perform a meaningful assessment.

Table 2.9-2. Vehicle System/Mission Reliability

Vehicle Type	Power Section	Work Section	MERADCOM Test Hours	Reliability (10 Hours) System P.S.	Reliability (10 Hours) System W.S.	Reliability (10 Hours) System Veh.	Reliability (10 Hours) Mission w/MCF P.S.	Reliability (10 Hours) Mission w/MCF W.S.	Reliability (10 Hours) Mission w/MCF Veh.	80% Confidence Intervals Mission MTBF	80% Confidence Intervals Mission Reliability
Dumper I	T935	T936	1047	0.63	0.89	0.56	0.84	0.98	0.82	40 - 70	0.78 - 0.87
Loader	T937	T966	936	0.56	0.81	0.46	0.80	0.94	0.76	29 - 47	0.71 - 0.81
Grader I	T939	T940	776	0.61	0.63	0.40	0.86	0.83	0.72	24 - 40	0.66 - 0.78
Distributor I	T941	T938	830	0.61	0.92	0.56	0.86	0.96	0.83	39 - 75	0.77 - 0.87
Dozer I	T943	T944	743	0.69	0.84	0.57	0.86	0.92	0.80	33 - 62	0.74 - 0.85
Dozer II	T945	T946	* 0	**	**	**	**	**	**	**	**
Scraper I	T947	T948	* 0	**	**	**	**	**	**	**	**
Grader II	T949	T950	110	**	**	**	**	**	**	**	**
T.F. Compactor	T951	T952	293	0.65	0.74	0.46	0.93	0.97	0.90	55 - 267	0.83 - 0.96
S.D. Compactor	T953	T954	273	0.84	0.61	0.49	0.90	0.98	0.88	45 - 193	0.80 - 0.95
Scraper II	T955	T956	230	0.49	0.54	0.29	0.80	0.79	0.63	16 - 35	0.53 - 0.75
Distributor II	T957	T958	237	0.84	0.81	0.68	0.88	0.86	0.76	24 - 66	0.65 - 0.86
Dumper II	T959	T960	374	0.69	0.92	0.63	0.88	0.99	0.86	43 - 134	0.79 - 0.93
Dumper III	T935	T942	200	0.40	0.90	0.37	0.84	0.98	0.82	30 - 115	0.72 - 0.92

MCF - Mission Criticality Factors
P.S. - Power Section; W.S. - Work Section; Veh. - Vehicle
* Not tested at MERADCOM.
** Insufficient hours to perform a meaningful assessment.

Table 2.9-3. Vehicle System/Mission MTBF

Vehicle Type	Power Section	Work Section	MERADCOM Test Hours	MTBF					
				System			Mission w/MCF		
				P.S.	W.S.	Veh.	P.S.	W.S.	Veh.
Dumper I	T935	T936	1047	22	87	17	58	419	51
Loader	T937	T966	936	17	49	13	46	170	36
Grader I	T939	T940	776	20	22	11	67	54	30
Distributor I	T941	T938	830	20	119	17	64	277	52
Dozer I	T943	T944	743	27	57	18	68	124	44
Dozer II	T945	T946	* 0	**	**	**	**	**	**
Scraper I	T947	T948	* 0	**	**	**	**	**	**
Grader II	T949	T950	110	**	**	**	**	**	**
T.F. Compactor	T951	T952	293	23	33	13	146	293	98
S.D. Compactor	T953	T954	273	55	20	14	91	546	78
Scraper II	T955	T956	230	14	16	8	46	42	22
Distributor II	T957	T958	237	59	47	26	79	68	36
Dumper II	T959	T960	374	27	125	22	75	748	68
Dumper III	T935	T942	200	11	100	10	57	400	50

MCF - Mission Criticality Factors
P.S. - Power Section; W.S. - Work Section; Veh. - Vehicle
* Not tested at MERADCOM.
** Insufficient hours to perform a meaningful assessment.

2.10 DURABILITY

2.10.1 Objectives

a. To determine if there are durability deficiencies on the FAMECE system.

b. To demonstrate the specific durability of each major component.

c. To demonstrate the adequacy of changes to the major components.

2.10.2 Criteria

A durability failure is defined as any malfunction that prevents the item from performing its prescribed function as a result of wear and which requires repair, overhaul, or rebuild at General-Support or higher level maintenance. Each of the major component groups listed below shall have a 50% probability of completing the hours of operation specified in the Test Plan without a durability failure:

Major Component	Hours of Operation
Power train	1250
Engine	
Transmission	
Differential and axle	
Coupling mechanism	1000
Hydraulic motors	1000
Hydraulic pumps	1000
Hydraulic cylinders	1000

2.10.3 Method

The FAMECE was tested in accordance with Appendices III to X of the PQT-G Test Plan, dated 25 October 1977. A scoring conference was to determine which failures were durability failures based on a record of all failures and the total operating time (in hours).

2.10.4 Results

To date, the durability failures have not been identified by the FAMECE scoring conferees; therefore, the durability parameters are not presented.

2.10.5 Analysis

Once the durability information is provided, five calculations will be performed, one for each major component group. If the probability of completion is equal to or greater than 50% for a given group, that group meets the durability criteria. The probability of each major component meeting the specified criteria is:

$$P = 1 - \frac{X}{N}$$

Where:

P = Probability of completion.
X = Number of components within the specified time for a component group.
N = Number of failures in the given component group that have operated for the specified time.

2.11 FINAL INSPECTION

2.11.1 Objectives

a. To determine if any defects were caused during prior tests and were not detected before the final inspection.

b. To prepare the test items to the required shipping code before shipment.

c. To conduct a limited teardown inspection, as required, in those areas where test operation indicates a need for a more detailed investigation.

2.11.2 Criteria

None.

2.11.3 Method

Each test item was inspected against: the checklists provided in the Operator's and Organizational Maintenance Manual, the inspection checklist provided in PQT-G, and EPRs and various data generated and logged during the testing program.

Teardown was conducted only where scheduled service, repair to serviceable condition, or modification was dictated.

2.11.4 Results

Modifications and necessary repairs were made to restore test items to serviceable condition. (Serviceable condition meaning that detected seeps, cracks, and similar conditions would not worsen prior to the next scheduled maintenance or the end of the total test including OT.) In some instances, detected defects could not be corrected because spare parts were not available. Time did not permit teardown solely for inspection. Further, this would have interfered with the collection of reliability and maintenance data.

2.11.5 Analysis

Although the test items were inspected at MERADCOM prior to shipment to the Fort Bragg (OT) test site, many reportable EPR incidents and maintenance actions occurred as a result of the inspection and interpretation of serviceable condition prior to the operational test conducted at Fort Bragg by OTEA personnel. These incidents were collected, reported, and scored as part of the PQT-G.

FAMECE Engineer Change Notices accomplished prior to the start of OT II are shown in Table 2.11-1. The majority of these changes or modifications were made after the PQT was terminated. Engineer Change Notices not assigned numbers are shown in Table 2.11-2.

Table 2.11-1. FAMECE Engineer Change Notices Accomplished Prior to the Start of OT II

Section	FCN No.	Description
Power	1303	Transmission neutral solenoid
Power	1369	Hood latch
Power	1396	Fuel tank mounting bracket
Power	1417	Electromagnetic interference suppressors
Power	1445	Dolly-wheel cylinder hose
Power	1455	Dolly-wheel cylinder valve, shutoff
Power	1488	Lock plate modification
Power	1514	Battery cable rerouted
Dozer	1525	Tilt link
Power	1540	Transmission dipstick pipe (Dozers PS 107 & 109)
Dozer	1559	Winch cable guide
TF Compactor	1563	Tamping-foot drum cleaners
Compactors	1567	Dirt shield, drum lift switch
Power	1578	Air throttle modification
Dozer	1587	Winch assembly modification
Scraper	1596	Storage for propshaft
Power	1599	Rifle mount
Power	1602	Cab mirrors
Power	1613	Compressor outlet hose
Scraper	1614	Pump propshaft
Power	1617	Throttle linkage
Power	1618	Rotate speed limiter
Power	1628	Tachometer drive (deferred on PS 104, 105 & 106)
SD Compactor	1629	Add locks, cut hole in strut
Power	1638	High-inertia flywheel (PS 106 & 108)
SD Compactor	1639	Tire cleaner lock
Grader	1660	Lift cylinder mounting bolt
Grader	1666	Convex mirrors
Loader	1672	Boom locking bar pin alignment
Power	1682	Remove bottom rung of ladder
Grader	1696	Grader axle stops
Dumper	1712T	Dumping tailgate pin
Power	1717	Relay box
Scraper	1743	Magnetic drain plug
Distributor	1751T	Sight gauge, water level
Power	1755	Air tank drain petcock
Scraper	1760	Control box & propshaft mounting kit
Scraper	1761	Hydrostatic drive filter
Scraper	1762	Pressure switch

Table 2.11-2. FAMECE Engineer Change Notices
(Numbers Not Assigned)

Section	Description
Grader	Drive-shaft disconnect
Grader	Side-shift nut
Distributor	Drain for spray bar
TF Compactor	TF vibrator hood support
Power	Grease coupler
Scraper	Scraper-bowl lock
Power	Fuel pump housing (as leaks occur)
SD Compactor	Water-level switch
Grader	Grommet for steer tube (102 only)

APPENDIX A. CRITICAL ISSUES AND TEST CRITERIA

Part I
(from AMSAA, TDP)

Those issues extracted from the AMSAA, TDP, Appendix C, ich were tested for, or observed during, the MERADCOM PQT-G.

Test Critical Issues	Test Criteria
1. Does the FAMECE meet mission established RAMD requirements?	RAMD data obtained from simulated mission tasks. *MTBF required for satisfactory performance is 55 hours.* However, this figure is arbitrary and has not been justified. It is anticipated that a more defendable value will be developed by the Engineer School and PM before this test is finished.
2. Has satisfactory progress been made toward the required MAV?	Input to reliability growth curve (namely, all failure history) and data from VP-retest EDT-C, EDT-G, PQT, DT-II, and OT-II; all corrective actions. *Slope of curve must be such that projected MTBF after DT-III is 55 hours or more.*
3. Does FAMECE performance meet mission requirements?	The FAMECE derives several advantages in terms of production rate and cost from its use of the two-module concept. Much of this advantage will be lost if coupling and uncoupling times cannot be held under 30 minutes.
a. Coupling and uncoupling.	Time required to bring both modules into coupling position (i.e., travel time for uncoupling power module) will be reported but not added to coupling time.

APPENDIX A. CRITICAL ISSUES AND TEST CRITERIA

Part I
(from AMSAA, TDP)

Those issues extracted from the AMSAA, TDP, Appendix C, which were tested for, or observed during, the MERADCOM PQT-G.

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3. Does FAMECE performance meet mission requirements?	The FAMECE derives several advantages in terms of production rate and cost from its use of the two-module concept. Much of this advantage will be lost if coupling and uncoupling times cannot be held under 30 minutes.
a. Coupling and uncoupling.	Time required to bring both modules into coupling position (i.e., travel time for uncoupling power module) will be reported but not added to coupling time.

Test Critical Issues	Test Criteria
b. Mobility in adverse terrain.	The FAMECE must perform its mission tasks off-road. It must get to the work site and develop high tractive efforts under uneven terrains and soft soil conditions. There is some question concerning how mobile the uncoupled power module must be. If full advantage is to be taken of the commonality of the power module, it must be capable of moving from an idle work module to another location where another work module is inoperative because its power module is disabled. This capability is critical to the justification of the FAMECE concept.
c. Safety	It is obvious that a vehicle or family of vehicles that will be transported by air and operated in hazardous terrain in the immediate vicinity of other vehicles must be made as safe as the state-of-the-art allows. Personnel possessing nominal skill levels of construction equipment operators and maintenance personnel must be able to perform required functions without incurring any abnormal hazards such as exposed moving parts, dangerous noise levels, and vehicle instability. Tests involve examination of vehicle construction and operation as well as observation of personnel engaged in required operations. Operator MOS's are: Scraper - 62L. Grader - 63K. Loader - 62M. Dozer 62L. Distributor - 62J. Compactor - 62J. Dumper - 64C.

APPENDIX A. CRITICAL ISSUES AND TEST CRITERIA

Part II
(from PQT-G Test Plan, October 1977)

This appendix is a cross index between the material need criteria and the PQT tests that will generate data to validate the criteria. The criteria are the basic requirement from which the detail test plans for the various work sections are created. Certain criteria are addressed in the contractor-performed RDAT or EDT and will not be repeated in the PQT. However, adherence or exceptions to these criteria will be noted and recorded throughout the PQT.

Item	Source	Criteria	Applicable Subtest from PQT-G Detail Test Plan	Remarks
1.	MN(ED) QMR 2.b(1)	Mission. (1) The typical mission duration for any member of the family will be 10 hours. The average yearly usage envisioned for any member of the family will be 1000 hourmeter hours.	Reliability, para 2.9	
2.	MN(ED) QMR 2.b(2)	A typical mission profile for each member of the family will be composed of the following construction tasks in the percentages indicated below:		
		a. Dozer Earthmoving (dozing) 60% Stockpiling 15% Push loading 5% Towing 5% Travel 10% Miscellaneous 5%	Dozer, Appendix IV	Includes clearing, grubbing, towing, winching, scarifying, & ditching.
		b. Loader Stockpiling 20% Earthmoving (loading) 65% Travel 10% Miscellaneous 5%	Loader, Appendix III	Excavating, clamshell, rough grading, backfilling, mounting and dismounting counterweights.

Item	Source	Criteria		Applicable Sub-test from PQT-G Detail Test Plan	Remarks
2.	(continued)	c. Scraper		Scraper, Appendix V	
		Earthmoving (scraping)	80%		
		Hauling (construction materials)	5%		
		Travel	10%		
		Miscellaneous	5%		
		d. Dumper		Dumper, Appendix VI	
		Towing	5%		
		Earthmoving (hauling)	50%		
		Hauling (construction materials and general cargo)	30%		
		Travel (to include transporting squad personnel and tools)	15%		
		e. Grader		Grader, Appendix VIII	
		Road maintenance	50%		
		Spreading and leveling fill	20%		
		Ditching	10%		
		Travel	10%		
		Miscellaneous	10%		
		f. Compactors		Compactors, Appendix IX	
		Embankment compaction	30%		
		Base course compaction	30%		
		Asphalt compaction	10%		
		Vibratory mode compaction	20%		
		Travel	10%		

Item	Source	Criteria	Applicable Subtest from PQT-G Detail Test Plan	Remarks
2.	(continued)	g. Distributor Hauling water 35% Distributing water 55% Travel 10%	Distributor, Appendix VII	
3.	MN(ED) QMR 9.a(1)	(Essential) Must operate utilizing standard Army fuels and lubricants.	Initial Inspection, para 2.2	
4.	MN(ED) QMR 9.a(3)	(Essential) Have sufficient fuel capacity for at least 200 miles of travel on secondary roads or 10 hours of operation as a work tool.	All performance subtests	Data are recorded of hours of operation and amounts of fuel used.
5.	MN(ED) QMR 9.a(7)	(Essential) Consist of no more than two major functional components; a power module and a construction work module.	Initial Inspection, para 2.2	
6.	MN(ED) QMR 9.a(12)	(Essential) Waterproof and dustproof storage provisions for maintenance log, manuals, and other instructions shall be provided on each power module and work module.	Initial Inspection Action, para 2.2	Determined at initial inspection and checked continuously throughout the testing.
7.	MN(ED) QMR 9.a(16)	(Essential) The power module and work modules will be capable of being coupled or uncoupled at the work site within 30 minutes (15 minutes desirable) without the need for special tools or equipment.	Initial Inspection Action	Determined at initial inspection and checked continuously throughout the testing.

Item	Source	Criteria	Applicable Sub-test from PQT-G Detail Test Plan	Remarks
8.	MN(ED) QMR 9.a (18)(b)	The FAMECE system shall have a Minimum Acceptable Value (MAV) of Mean Time Between Failure (MTBF) comparable to existing military construction equipment. The current best estimates for MAV and Best Operational Capability (BOC) are 55 and 95 hours, respectively. These values will be reassessed as soon as practicable, and in any event not later than the beginning of DT II, based on a joint AMC/TRADOC study of existing comparable military construction equipment.	Reliability, para 2.9	
9.	MN(ED) QMR 9.a (19)(b)	The FAMECE shall have an achieved availability (Aa) of 86% (based on an average number of mechanics per maintenance action of 1.8) during developmental testing as determined by the following formula: $Aa = \frac{OT}{OT + TCM + TPM}$ Where: OT = Operating time (hourmeter hour) ST = Standby time (assumed operable) TCM = Total active corrective maintenance (unscheduled) TPM = Total active preventive maintenance (scheduled)	Maintenance, para 2.8	

Item	Source	Criteria	Applicable Sub-test from PQT-G Detail Test Plan	Remarks
10.	MN(ED) QMR 9.a(20)	(Essential) Durability: Each of the following major component groups shall have a 50% probability of completing the hours of operation specified without a durability failure. A durability failure is defined as any malfunction that prevents the item from performing its prescribed function as a result of wear and which requires repair overhaul or rebuild at General-Support or higher level maintenance.	Durability	

Major Component Groups	Hours
a. Power trains (consisting of): Engine, Transmission, Differential and axle	1200
b. Coupling mechanism	1000
c. Hydraulic motors	1000
d. Hydraulic pumps	1000
e. Hydraulic cylinders	1000

Item	Source	Criteria	Applicable Sub-test from PQT-G Detail Test Plan	Remarks
11.	MN(ED) QMR 9.b (1)(c)	(Essential) Have a dozing capability of 80 loose cubic yards per hour while excavating a 100-foot slot trench in undisturbed sandy, clay soil at no greater than optimum moisture content. Have a dozing capability, when counterweighed, of 110 loose cubic yards per hour while excavating a 100-foot slot trench in undisturbed sandy, clay soil at no greater than optimum moisture content. (Desirable) *Installation of counterweight will not cause the weight of the module to which it is attached to exceed 15,000 pounds.*	Dozer, Appendix IV	Installation of counterweight will not cause the weight of module to which it is attached to exceed 15,000 lb will not be tested.
12.	MN(ED) QMR 9.b (1)(e)	(Essential) Semi-U dozer with back-rip scarifier teeth or comparable type blade shall be capable of tilt adjustment to at least 10 inches in each direction when measured from one blade to the other blade corner and a manual pitch adjustment of at least 9 degrees. The blade shall be capable of push-loading scrapers.	Dozer, Appendix IV	
13.	MN(ED) QMR 9.b (1)(f)	(Essential) Be capable of climbing and descending longitudinal slopes of 60% and side slopes of 35%.	Dozer, Appendix IV	This characteristic is tested in EDT. Vehicle stability will be observed through the testing.

Item	Source	Criteria	Applicable Sub-test from PQT-G Detail Test Plan	Remarks
14.	MN(ED) QMR 9.b (2)(c)	(Essential) Have a loader capacity, with a multisegment bucket of at least 2-1/2 cubic yards capacity, of not less than 250 cubic yards per hour when loading from a stockpile of loose sandy, clay soil. Consistent with good vehicle design practice, a larger capacity bucket is desired.	Loader, Appendix III	This characteristic is tested in EDT. Vehicle stability will be observed throughout the testing.
15.	MN(ED) QMR 9.b	(Essential) Be capable of climbing and descending longitudinal slopes of 60% and negotiating side slopes of 27% when empty.	Loader, Appendix III	This characteristic is tested in EDT. Vehicle stability will be observed throughout the testing.
16.	MN(ED) QMR 9.b (3)(a)	(Essential) Be capable, when loaded to a GVW of at least 50,000 pounds, of attaining and maintaining a forward speed of at least 20 mph when ascending a 2.5% slope on a hard, smooth surface with a vehicle rolling resistance of 40 pounds per ton.	Scraper, Appendix V	This criteria will be validated commensurate with test area capability.
17.	MN(ED) QMR 9.b (3)(b)	(Essential) The scraper control system shall provide: a. Power closing of apron. b. Power down pressure on the cutting edge.	Initial Inspection, para 2.2	The scraper control system will be checked at initial inspection and evaluated throughout the entire testing.

Item	Source	Criteria	Applicable Sub-test from PQT-G Detail Test Plan	Remarks
17.	(continued)	c. Positive ejection and power return of ejector gate.		
		d. Fast drop bowl to promote pump loading.		
18.	MN(ED) QMR 9.b (3)(c)	(Essential) Have a minimum rated struck capacity of 10 cubic yards (12 cubic yards desirable).	Scraper, Appendix V	Validated during RDAT or EDT. Functional capability observed during PQT.
19.	MN(ED) QMR 9.b (3)(d)	(Essential) When loaded to rated load, be capable of climbing a 30% longitudinal slope or of descending a 60% longitudinal slope and of negotiating 20% side slopes with the bowl in the normal travel position. Be capable of negotiating 35% side slopes when empty.	Scraper, Appendix V	Validated during RDAT or EDT. Scraper stability will be observed during PQT.
20.	MN(ED) QMR 9.b (3)(e)	(Essential) Be capable of being push-loaded by the dozer member of this family. *The scraper shall be capable of loading to rated capacity in sandy, clay soil, with no greater than optimum moisture content in 40 seconds when pusher-assisted by a FAMECE dozer, In the same soil, the scraper shall be capable of self-loading to 80% of rated capacity in 60 seconds.*	Scraper, Appendix V	Underlined portion of criteria is a contractual, not an MN requirement, and is coordinated standard and will be validated during PQT in conjunction with dozer test.

Item	Source	Criteria	Applicable Sub-test from PQT-G Detail Test Plan	Remarks
21.	MN(ED) QMR 9.b (4)(c)	(Essential) Provide a side shifting 13-foot grader blade capable of assuming any normal blade position from ditching to bank cutting. (Desirable) Be capable of grading in a forward and reverse direction.	Grader, Appendix VIII	Validated during PQT.
22.	MN(ED) QMR 9.b (5)(a)	(Essential) Have a payload capability of at least 10 tons (12 tons desirable).	Dumper, Appendix VI	Validated during RDAT and EDT.
23.	MN(ED) QMR 9.b (5)(c)	(Essential) Have a rear dump capability while moving forward so as to spread the hauled material. The capability to side dump as well as rear dump is desirable.	Dumper, Appendix VI	Validated during PQT.
24.	MN(ED) QMR 9.b (5)(e)	(Essential) Be capable of climbing and descending longitudinal slopes of 60% and side slopes of 20% (30% desirable) with its rated load.	Dumper, Appendix VI	Validated during RDAT or EDT. Lesser slopes capability observed during PQT.
25.	MN(ED) QMR 9.b (5)(f)	(Essential) Be capable of hauling its rated load at least 20 mi/h on a hard, smooth surfaced road with rolling resistance of 40 pounds per ton and up to 2.5% slope.	Dumper, Appendix VI	Validated during RDAT or EDT.
26.	MN(ED) QMR 9.b (5)(g)	(Essential) The dump bed should be configured so it may be used for general cargo hauling and for the transportation of squad personnel with tools and equipment.	Dumper, Appendix VI	The transportation of squad personnel with tools and equipment will be tested during PQT.

Item	Source	Criteria	Applicable Sub-test from PQT-G Detail Test Plan	Remarks
27.	MN(ED) QMR 9.b (6)(a)(1)	(Essential) Be capable of compacting without soil shear at speeds in excess of 7.5 mi/h (10 mi/h desired). The compactor shall impart impact to the soil mass when operating in excess of 1.5 mi/h. *In addition, the tamping-foot compactor shall impart beneficial vibration to the soil mass when compacting at speeds in excess of 6 mi/h.*	Compactor, Appendix IX and X	The underlined portion of criteria will be subjectively evaluated.
28.	MN(ED) QMR 9.b (6)(a)(2)	(Essential) By smooth steel drum, capable of exerting compaction pressures of up to 150 pounds per linear inch or roller width. A vibration mechanism shall provide dynamic forces in excess of 25,000 pounds.	Compactor, Appendix IX and X	Validated during RDAT or EDT.
29.	MN(ED) QMR 9.b (6)(a)(3)	By pneumatic tires capable of providing unit ground pressures up to at least 100 lb/in^2. Tire pressure shall be capable of being varied to provide a high production, variable pressure, pneumatic compactor for work on base and sub-bases and for teaming with tamping-foot compactors on embankment compaction work.	Compactor, Appendix IX and X	Validated throughout PQT.

Item	Source	Criteria	Applicable Sub-test from PQT-G Detail Test Plan	Remarks
30.	MN(ED) QMR 9.b (6)(b)	(Essential) The compactor work modules shall be configured as a tamping-foot pneumatic-tire configuration, and as a smooth, steel drum-pneumatic tire configuration in order to be transportable without the need of a trailer.	Compactor, Appendix IX and X	Durability of compactor in transport mode.
31.	MN(ED) QMR 9.b (6)(c)	(Essential) The compactor modules shall have a controlled watering system to provide water or oil spray on the smooth drum and pneumatic tires to insure 4 hours of continuous use. Scrapers and/or cleaner bar type devices, as appropriate, will be provided for removing excess materials from the drum, tires, and tamper feet.	Compactor, Appendix IX and X	Validated during PQT.
32.	MN(ED) QMR 9.b (6)(g)	(Desirable) Compactor modules shall incorporate a rear dump ballast box.	Initial Inspection	
33.	MN(ED) QMR 9.b (7)(g)	(Essential) Be capable of spraying water from each side and the rear using adjustable spray heads, individually controlled from the operator's station.	Initial Inspection Distributor	
34.	MN(ED) QMR 9.b (7)(b)	(Essential) Be capable of spraying water not less than 35 feet from the spray head and provide a spray pattern adjustable from 20 feet to 70 feet in width at the rear of the distributor.	Distributor	Validated during RDAT and EDT. Durability validated during PQT.

Item	Source	Criteria	Applicable Sub-test from PQT-G Detail Test Plan	Remarks
35.	MN(ED) QMR 9.b (7)(g)	(Essential) Shall be capable of self-loading within a period of 10 minutes.	Distributor	Validated during RDAT or EDT; spot checked during PQT.
36.	MN(ED) QMR 9.b (7)(e)	(Essential) A ladder shall be provided for access to a hinged manhole cover on top of the tank.	Initial Inspection	Validated during RDAT or EDT.
37.	MN(ED) QMR 10.d	(Essential) Be provided with adequate connections to be towed and be capable of towing standard military trailers.	Dumper Dozer	Validated during RDAT or EDT.
38.	MN(ED) QMR 10.e	(Essential) Have simple, easily accessible controls for use by a single operator. Seating space for two will be provided at the operator's platform. *Be designed to provide clear visibility for all types of operators.*	Initial Inspection HFE Evaluation	The underlined portion of criteria will be subjectively evaluated.
39.	MN(ED) QMR 10.i	(Essential) Quick disconnect fittings with attached covers shall be provided to facilitate sectionalization of all members of the family.	Initial Inspection	Criteria to be evaluated throughout PQT.
40.	MN(ED) QMR 10.k	(Essential) Power modules shall be equipped with windshield protection and removable wheel fenders or mud guards as appropriate. Total module weight will not exceed 15,000 pounds with these attachments installed.	Initial Inspection	

Item	Source	Criteria	Applicable Sub-test from PQT-G Detail Test Plan	Remarks
41.	MN(ED) QMR 11.a	(Desirable) Design the family of equipment to facilitate maintenance accessibility in a field environment at all categories of maintenance so that required maintenance will be performed in the minimum practicable time with a minimum degree of skill, variety of tools, test equipment and other supplies.	Maintenance Evaluation (Repair Parts) (Design for Maintenance)	
42.	MN(ED) QMR 11.b	(Essential) Maximize the utilization of the module concept of maintenance to enable "repair by replacement."	Maintenance Evaluation (Repair Parts)	
43.	MN(ED) QMR 11.c	(Essential) Design automotive components to be compatible with internal and external automatic test equipment (ATE).	Maintenance Evaluation (Tools and Test Equipment)	
44.	MN(ED) QMR 11.d	(Essential) Sealed, self-lubricating, or dry-type bearings will be used in locations on equipment not accessible for lubrication. (Desirable) Maximum use will be made of these devices.	Maintenance Evaluation (Design for Maintenance)	
45.	MN(ED) QMR 11.e	(Essential) Design to prevent malfunctioning and damage to controls and linkage due to freezing, dirt, and mud accumulation.	Maintenance Evaluation (Design for Maintenance)	
46.	MN(ED) QMR 11.f	(Desirable) Utilize only rapid exchange (i.e., plug-in/plug-out or twist-in/twist-out) components.	Maintenance Evaluation (Repair Parts)	

Item	Source	Criteria	Applicable Sub-test from PQT-G Detail Test Plan	Remarks
47.	MN(ED) QMR 11.g	(Essential) Utilize throwaway items whenever feasible to reduce maintenance effort on expendable items.	Maintenance Evaluation (Repair Parts)	
48.	MN(ED) QMR 11.g	(Essential) High-mortality parts that do not require component disassembly and parts designed to fail when overloaded shall be easily accessible and replaced rapidly by the operator using only OEM tools.	Maintenance Evaluation (Repair Parts) (Design for Maintenance)	
49.	MN(ED) QMR 11.i(1)	The total scheduled and unscheduled Operator, Organizational, and Direct Support Maintenance shall require no more than 0.30 man-hours per hourmeter hour of operation per vehicle (power modules plus work module). The approximate breakdown by various levels of maintenance is shown below. Only the overall ratio of 0.30 is a firm requirement.	Maintenance Evaluation (Maintenance Indices)	
50.	MN(ED) QMR 11.i(2)	Operator: Maintenance limited to cleaning, lubrication, minor adjustments, and replacement of some modular and minor components. Operator maintenance on any vehicle shall require approximately 0.03 man-hour per hourmeter hour of operation (exclusive of daily services and inspections)	Maintenance Evaluation (Maintenance Indices)	

Item	Source	Criteria	Applicable Sub-test from PQT-G Detail Test Plan	Remarks
51.	MN(ED) QMR 11.i(3)	*Organizational: Maintenance* limited to minor adjustments of components and replacement of assemblies (e.g., remove and replace starter motor, generator assembly). Service performed on any vehicle of the family shall require no more than approximately 0.18 man-hour per hourmeter hour of operation.	Maintenance Evaluation (Maintenance Indices)	
52.	MN(ED) QMR 11.i(4)	Direct Support Maintenance: Maintenance performed will include technical inspection and support assistance to units by contact teams in the repair or replacement of components, assemblies, and parts. Service performed on any vehicle of the family shall require no more than approximately 0.09 man-hour per hourmeter hour of operation.	Maintenance Evaluation (Maintenance Indices)	
53.	MN(ED) QMR 11.i(5)	General-Support Maintenance: Maintenance performed will reinforce the direct-support maintenance units and will accomplish major end-items repair and repair of components/assemblies for return to stock. Extent of repairs will be determined by economic repair limits and stock status of replacement items. When required, general-support units provide overflow maintenance support for direct-support units.	Maintenance Evaluation (Maintenance Indices)	

Item	Source	Criteria	Applicable Sub-test from PQT-G Detail Test Plan	Remarks
54.	MN(ED) QMR 11.j	Operator Daily Services and Inspections: (Essential) Requirements for inspections must be kept to an absolute minimum. Before operation and after operation checks and services will not exceed an average of 30 minutes each.	Maintenance Evaluation (Maintenance Indices)	
55.	MN(ED) QMR 11.k	Scheduled Maintenance: (Essential) Requirements for scheduled maintenance other than operator daily checks and services shall be established at 250 (desirable 400) hourmeter hours or quarterly, whichever occurs first. Such maintenance shall be performed in an average of 6.25 (5 desirable) man-hours using only available organizational maintenance means and skills.	Maintenance Evaluation (Maintenance Indices)	
56.	MN(ED) QMR 11.1	(Essential) Engine accessories, i.e., starter motor, generators, injector pump, fuel pump, turbocharger and similar items, must have the characteristics of being easily accessible for repair and/or replacement at the Organizational level.	Maintenance Evaluation (Design for Maintenance)	
57.	MN(ED) QMR 12.a	(Essential) The family of equipment shall be designed in accordance with sound human factors engineering principles and in conformity with the following standards: a. MIL-STD-1472B,"Human Engineering Requirements for Military Systems, Equipment and Facilities."	Human Factors Engineering	

Item	Source	Criteria	Applicable Sub-test from PQT-G Detail Test Plan	Remarks
57.	(continued)	b. MIL-H-46855, "Human Engineering Requirements for Military Systems, Equipment and Facilities."		
		c. MIL-HDBK-759, "Design Standards for Wheeled Vehicles."		
		d. MIL-STD-1474A, "Noise Limits for Army Materiel."		
58.	MN(ED) QMR 12.b	(Essential) Safety Engineering Criteria: The family of equipment will be designed in accordance with safety engineering principles to provide maximum degree of safety to operator, maintenance personnel, and equipment during all phases of development, test, and field utilization.	Safety Evaluations	
		The appropriate safety engineering requirements of AR 385-16 and MIL-STD-882 are applicable.		
59.	MN(ED) QMR 15	Training Considerations: No specialized training other than current MOS training for equipment operator and equipment mechanic will be required. On-the-job training at unit level for sectionalization of this equipment will be required for both operator and maintenance personnel. Ten spaces for new equipment training for instructor personnel and a specified number of	Human Factors Evaluation	

Item	Source	Criteria	Applicable Sub-test from PQT-G Detail Test Plan	Remarks
59.	(continued)	power modules, work modules, and model components will be required 120 days in advance of initiation of Service School and Training Center training. Quantities will be specified by TRADOC during the full-scale development phase.		
60.	MIL-STD-1472A	Operator seating must accommodate Army personnel within the range of 5th to 95th percentile.	Human Factors Evaluation	
61	MIL-STD-1472A	Personnel enclosures (cabs) shall provide a working environment which is compatible with human performance characteristics with respect to vibration, ventilation, and temperature control.	Human Factors Evaluation	

APPENDIX B

TEST DATA

REFERENCE OIL PROGRAM

FAMECE DT II

Final Report
May 1978

Submitted By:

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I. INTRODUCTION

Developmental Testing (DT II) of a new Family of Lightweight Engineering Construction Equipment (FAMECE) was conducted at Fort Belvoir, Virginia. This equipment was designed to meet the high-mobility and airlift/airdrop requirements of the Army Airborne and Airmobile units. In cooperation with the Project Manager's Office (PMO), FAMECE/UET, the Energy and Water Resources Laboratory participated in a cooperative program involving field testing of a reference lubricant in selected vehicles. This reference lubricant is presently in the Army supply system and is typical of the quality of lubricant that will be used in FAMECE after fielding. The Energy and Water Resources Laboratory provided this MIL-L-2104C reference oil for use in the engines, transmissions, and hydraulic systems of selected vehicles and, in addition, conducted an engine inspection and lubricant analysis related to lubricant performance. The overall objective of this participation in FAMECE DT II was to obtain baseline data on the use of MIL-L-2104C engine oil as a hydraulic fluid with the intention of possible modifications of a future MIL-L-2104 specification to include hydraulic performance requirements not currently included.

FAMECE DT II EVALUATION

The original intent of this evaluation was to subject 13 vehicles to 1000 hours of field evaluation under service typical of their intended use. Operation of this prototype construction equipment and field maintenance tasks were performed by military personnel stationed at Fort Belvoir with the overall test being monitored by the Mechanical and Construction Equipment Laboratory. Equipment evaluated included

2 graders, 2 water distributors, 3 dumpers, 1 dozer, 1 loader, 1 scraper, 1 tamping-foot compactor, and 1 smooth-wheel compactor. Testing was conducted after vehicle arrival from the contractor, Clark Equipment Company. The first unit, Dumper I, arrived in July 1977; other vehicles arrived at later dates. In March 1978, before the arrival of the last two vehicles of the test set, a decision was made to terminate testing at Fort Belvoir and complete the DT II evaluation requirements at other installations. This revision of the test plan affected the data base of this report in that only five units had accumulated a significant number of operational hours during this limited time frame.

LUBRICATION REQUIREMENTS

The lubrication orders for FAMECE require the use of a Grade 30 MIL-L-2104C engine oil (OE/HDO-30) for crankcase lubrication and a Grade 10 MIL-L-2104C engine oil (OE/HDO-10) for transmission and hydraulic system lubrication. The effectiveness of OE/HDO-30 as an engine oil and OE/HDO-10 as a transmission fluid is fairly well established. Of particular interest to MERADCOM is the use of OE/HDO-10 as a hydraulic fluid, in that this represents a significant departure from the standard lubrication requirements for combat support equipment. Normally, hydraulic fluids, such as MIL-H-6083 (OHT) and MIL-H-46170 (FRH), which were specifically designed to satisfy military hydraulic requirements are required for use in combat support equipment. No significant studies on the use of an engine oil as a hydraulic fluid in Army equipment has been reported.

Hydraulic fluids differ from engine oils in several important physical and chemical aspects. Certain parameters involved in the use of an engine oil in hydraulic applications need to be considered. Use of military

hydraulic fluids provides low temperature operability, minimal wear of critical hydraulic fluid components and a high level of rust protection for valves and exposed ram shafts. The MIL-L-2104C (OE/HDO) specification does not address the above hydraulic fluid requirements but is primarily concerned with the performance of a candidate oil in an operating diesel engine. Approximately 200 oil companies are qualified to produce MIL-L-2104C lubricants and wide variations in the type of additive package used in the oil formulation are found. This variation does not significantly affect engine performance, however, wide variations in secondary nonengine lubrication properties, that are directly related to the use of this oil in hydraulic applications, are known. For example, in the area of rust protection, a study of randomly selected samples of OE/HDO indicated variations in rust protection levels from 36 hours to in excess of 360 hours. It is suspected that certain variations in hydraulic system performance will be dependent on the types of OE/HDO-10 formulations in the supply system. On the other hand, the use of OE/HDO as a universal lubricant for military construction equipment is of particular value to this equipment since operation with minimal support is needed.

OBJECTIVES OF LUBRICANT EVALUATION

This Laboratory has custodial responsibility for the MIL-L-2104C specification and lubricant RDT&E programs within the Department of the Army. Presently, the use of OE/HDO-10 in satisfying hydraulic application requirements is under study. Consideration is presently being given to the optimization of hydraulic fluid performance requirements of OE/HDO-10 in a future modification of the MIL-L-2104 specification, however, such

requirements must first be defined. This participation in FAMECE DT II was to provide information that would serve in part as baseline data in determining the requirements needed in the future MIL-L-2104 specification.

II. DETAILS OF TEST

EQUIPMENT

FAMECE represents a class of wheeled construction and earthmoving equipment. Units are modular in design with a work unit consisting of a power module section coupled to a work section. Each section weighs less than 15,000 pounds. The various types of work sections used in this test are shown in Table B-1. In testing, a separate power module was used for each work section. Since all power modules are identical in construction, these units are listed by serial number. Total hours accumulated for each work unit at arrival and at test completion is also included in this table. The power train for these units consists of a Cummins VT-555 Turbo Charged 218 HP diesel engine with a Clark Model LT-7853 transmission. The hydraulic controls and a 70-gallon hydraulic reservoir are also located on the power module. The work section consists of the working component (e.g., blade, roller, etc.) and a secondary hydraulic system.

LUBRICATION REQUIREMENTS

Lubrication orders require the use of MIL-L-2104C oils for engine, transmission, and hydraulic applications. SAE 30 Viscosity Grade oil is required for crankcase lubrication when expected temperatures are above $+40^{\circ}$ F and 10 grade oil when temperatures are less than $+40^{\circ}$ F. SAE 10 Viscosity Grade oil is required for use in transmission and hydraulic systems provided that temperatures are above -10° F. For arctic conditions

or when the ambient temperature is less than 0°F, MIL-L-46167 (OEA) is required for use as a power train lubricant and as a hydraulic fluid. Lubrication orders originally required drain and refill of the crankcase and transmission oils at 400-hour intervals and the hydraulic fluid at 1000 hours, however, these orders were later modified to 250 hours for the crankcase oil, 500 hours for the transmission oil, and 1000 hours for the transmission fluid.

REFERENCE OIL PROGRAM

On 14 February 1977, personnel from the Energy and Water Resources Laboratory participated in a meeting with the FAMECE/UET staff relative to the use of reference grade lubricants, reference grade fuels, and silicone brake fluid in certain vehicles that were scheduled for DT II evaluation. At this meeting, it was indicated that a reference grade fuel could not be utilized in DT II due to logistic considerations but that possible program coordination could be achieved relative to the use of the reference grade lubricant and silicone brake fluid. A proposed lubricant test plan was outlined that involved the use of a reference grade MIL-L-2104C oil for use in crankcase, transmission, and hydraulic systems and silicone brake fluid in the brake systems of five vehicles. Concurrence with the test program was obtained from PMO, FAMECE/UET except that 6 rather than 5 vehicles (1 each dumper, scraper, grader, distributor, dozer, and compactor) would utilize reference grade oils and silicone brake fluid.

The finalized reference oil program for FAMECE DT II is included as part of Appendix B-A. This program required the forwarding of six 55-gallon drums of Grade 10 and six 55-gallon drums of Grade 30 MIL-L-2104C reference engine oils together with one gallon of a candidate MIL-B-46176 silicone

brake fluid to the FAMECE facility at Clark Equipment Company, Benton Harbor, Michigan, and the factory use of this fluid for factory fill of six vehicles. The vehicles were later identified as those vehicles having power sections with serial numbers 446X107 to 446X112. Following this, the major part of the reference oil program was to involve the monitoring of this set of vehicles during testing by periodic oil sampling/analysis to determine overall MIL-L-2104C/FAMECE system compatibility as reflected by wear metal analysis and potential degradation of lubricants as indicated by selected tests designed to measure lubricant quality. Other vehicles not included in the test plan were to have used a commercial oil of MIL-L-2104C quality for factory fill and OE/HDO from the supply system for refill requirements.

Several factors had considerable impact on the data base provided by this cooperative program. These factors include:

1. Early Termination of DT II. Only five vehicles had accumulated sufficient operational hours to be of value in satisfying the test objectives.

2. Invalid Commerical Oil. Analysis of the physical properties and elemental composition of the factory fill oil indicates that it is not a MIL-L-2104C oil and cannot serve as a basis for comparison with the reference oil.

3. Factory Errors in Fill of Reference Vehicles. The factory fill commercial oil was used in place of the reference oil in the hydraulic system of the dumper and dozer.

4. Test Plan Modification on Silicone Brake Fluid. Silicone brake fluid use was limited to the dumper and dozer.

The combination of these factors prevented any conclusions concerning the effectiveness of OE/HDO-10 lubricants in the FAMECE hydraulic system.

Due to changes in the original lubrication order, the sampling schedule outlined in the reference oil program was modified. Samples of engine, transmission, and hydraulic fluids were obtained on vehicle arrival at the test site and at vehicle accumulated hour readings of 250, 500, 750, and 1000 hours. Two types of oil samples were obtained. Drain samples (32-ounce) were collected at scheduled drain and refills, and 12-ounce intermediate samples were collected by the standard vehicle sample procedure using a syringe and plastic tubing. Several laboratories, including the Materials Technology Laboratory and the Energy and Water Resources Laboratory, MERADCOM, and the Army Fuels and Lubricants Research Laboratory (located at Southwest Research Institute), were involved in the analyses of these oil samples.

FUEL MONITORING ACTIVITY

In addition to the reference oil program, MERADCOM became actively involved in fuel-related programs that developed in FAMECE DT II. The primary activity in this area was a fuel cloudpoint monitoring program during the winter months. The activity was initiated by reported cold startup problems possibly related to fuel quality. Other problems, such as fuel filter clogging, were also investigated.

III. RESULTS OF TEST

Lubricant performance was evaluated primarily by physical and chemical testing of used oil samples from FAMECE equipment and by physical inspection of engine and transmission components from one of these vehicles. This latter inspection, conducted on a vehicle during teardown, showed

certain typical wear patterns which significantly facilitated the interpretation of data on wear metal concentrations.

ENGINE/TRANSMISSION INSPECTION

A DT II test program requirement included physical teardown and replacement of the engine and transmission components on one of the vehicles. Teardown was performed on the 10-ton dumper unit (power module 446X108 and dumper I work section) that had accumulated 1250 hours of long- and short-haul service under fully loaded conditions. Inspection data on the component parts of the Cummins Model VT555-C240 engine and Clark Model LT-7953 transmission are included in Appendix B-B. Inspection of the pistons, rings, crankshaft, camshaft, and valve train indicated normal wear patterns. The primary problem area was severe wearing of the No. 4 (rear) bearing. It was observed that a large quantity of copper was dislodged from the bearing surface. A peripheral problem involved scoring of thrust washers by dislodged copper debris. Transmission parts did not show any abnormal wear patterns. Mr. A. Barnabae, Field Technician for Cummins Diesel Engines, Inc., was present at teardown. He indicated that No. 4 (rear) bearing failures are normally indicative of lubricant starvation due to cold startups or insufficient engine idling before shutdown.

NEW OIL ANALYSIS

The physical properties and elemental compositions that characterize the commercial and reference oils used in this test are listed in Tables B-2 and B-3. Significant differences in chemical properties such as total acid number (TAN), total base number (TBN), and elemental composition are evident. It should be noted that the SAE 10 Viscosity

Grade commercial oil (Table B-3) has a pour point of -11° F. This indicates that the commercial oil is not of MIL-L-2104C quality since this specification requires a pour point of -25° F. The relatively high pour point of this commercial product could result in low-temperature lubricity problems.

WEAR METAL ANALYSIS

The concentrations of wear metals, silicone, and additive metals that were found in used oil samples from the grader, loader, water distributor, dozer, and dumper are presented in Tables B-4 through B-8. From this set of vehicles, the dozer and dumper were to be factory filled with the reference lubricant and the other vehicles were to be factory filled with a commercial lubricant.

Additive metal concentrations were included in these tables so as to allow calculations of dilutional effects and to verify the type of oil used for factory fill and field refill. Examination of Table B-3 reveals that the primary difference between the SAE 30 Viscosity Grade commercial and reference oil is that the reference oil contains approximately 4400 parts per million (p/m) of calcium, whereas the commercial oil contains 2500 p/m calcium. Inspection of the calcium concentration in initial engine oil samples taken from these vehicles (Tables B-4 - B-8) indicates that the factory-fill procedure was correct. Examination of Table B-2 indicates that the SAE 10 Viscosity Grade commercial oil contains barium, whereas SAE 10 Grade reference oil does not. Inspection of Tables B-4 through B-8 indicates the commercial product was mistakenly used for factory fill of the dozer transmission. This error is not considered serious since the reference oil was used as a refill oil at the 500-hour drain interval. Examination of these tables also indicates

that the commercial oil was used as the hydraulic fluid in all of these vehicles. The vehicles hydraulic systems were not factory filled with reference oil. This factory error invalidated the primary objective of this study.

Silicone is normally considered as a contaminant metal. The concentration of elemental silicone in the used oil samples is a measure of dirt (silica) ingestion and is included in these tables since extremely dusty conditions were noted at the test site during summer months and in view of the ever present possibility of accidental dirt ingestion during oil addition. Dirt ingestion would be expected to result in an accelerated wear of all engine components. Oil analysis data indicate a fairly constant and low level of silica in the engine oil. The effect of this component on engine wear appears to be minimal in that the aluminum concentration (from piston skirts), iron concentration (from cylinder walls, crankshaft, and camshaft), and chromium (from piston rings) did not show any direct variation with silicone concentration.

The inspection of engine parts during teardown indicated a potential bearing wear problem. Bearings utilized in the FAMECE are of a steel backing, copper flashing, and lead overlay design. Normal bearing wear would be indicated by the initial presence of lead followed by copper after a wearing away of the lead overlay. In these tables, wear metal data are presented for engine oil samples collected on vehicle arrival at the test site and at each 250-hour drain interval. The reference oil was used as the refill oil for all of these vehicles. With the exception of the water distributor, all units showed elevated copper and lead concentrations. These results suggest an accelerated bearing wear. The

absence of bearing wear signs in the water distributor is difficult to explain since a variety of factors, such as the inability to use the distributor during winter months, the operator, speed, and load, need to be considered. Findings suggest that there is no clear indication of differences in the commercial and reference oils inability to prevent rapid bearing wear. Another factor that needs to be considered is that bearing failure is characterized by the coarse copper metal particles which would not be detected in oil analysis. For example, in the dumper where bearing failure has been documented, high lead concentrations considerably in excess of the copper concentrations are found. This is not true in the case of the grader, loader, distributor, and dozer. Wear metal data for the grader, loader, and dozer indicate copper concentrations in excess of lead concentrations which may indicate a more normal but accelerated bearing wear. Although the copper/lead concentrations show a general decrease, these units show significant increases in iron concentrations that tend to indicate some type of wear problem.

Inspection of wear metal concentrations in the transmission oil samples indicates high copper, lead, and iron levels. These levels reflect the initial break-in process. After the initial 500-hour oil change, the wear metal concentrations significantly decrease in all vehicles with the exception of the dumper. Although copper and lead levels were high in the dumper, physical inspection of this transmission did not indicate any unusual wear problems.

Used oil samples from the hydraulic systems of the vehicles indicate slightly elevated copper levels in the grader, dozer, and dumper and slightly elevated iron levels in the loader and dozer. These levels

might be due to abrasive wear due to dirt ingestion. The iron concentration of these oils would be indicative of wear of the hydraulic control valves; however, since a physical inspection of the dumper hydraulic system could not be made, no correlation of wear metal concentrations with hydraulic system wear can be made.

LUBRICANT DEGRADATION

Viscosity changes and the amount of pentane insolubles in used engine oils are presented in Table B-9, and data on the viscosity changes and total solid contents of transmission and hydraulic fluids are presented in Table B-10. Due to a shortage of laboratory personnel, pentane insolubles and solid contents were determined on only a few randomly selected oil samples. Data from Table B-9 indicate an average engine oil viscosity increase of approximately 9% for 250 hours of operation. Viscosity increases as high as 25% are considered acceptable. Data do not indicate excessive deterioration of OE/HDO-30. Data from Table B-10 indicate minimal solid contents and viscosity increases in used transmission oils and hydraulic fluids. The apparent viscosity increase in the commercial oil is questionable. The reference oil viscosity of 6.7 cSt is considerably in excess of the 6.0 cSt viscosity of the commercial oil, and the use of the reference grade oil as make-up would at least contribute to this observed viscosity increase. No significant viscosity increases were found in the used reference oil samples.

SILICONE BRAKE FLUID

Of the two units utilizing silicone brake fluid, one is still under test. Admixing of VV-B-680 brake fluid (glycol-based) with the

silicone fluid invalidated testing on one of the two vehicles. No problems directly related to the use of this brake fluid were reported.

FUEL SURVEILLANCE

Certain starting/engine failure problems during DT II testing were suspected of being related to VV-F-800B diesel fuel quality. As part of this cooperative effort, technical assistance was provided in the resolution of fuel-related problems as they occurred. Primary problems were traced to housekeeping practices, fuel contamination of unknown origin, and use of a nonrecommended fuel deicing agent. A complete chronological account of the problems with supportive laboratory data is presented in Appendix B-C.

IV. CONCLUSIONS

Based on the results of this test and observations made during the test, it is concluded that:

- Wear metal analysis indicates an accelerated wear of main bearings in the FAMECE power modules.
- Contributing factors to bearing wear are believed to be due to nonconformity to lubrication order requirements to use the SAE 10 Grade MIL-L-2104C engine oil for ambient temperatures less than +40° F and improper operational procedures.
- The performance of the SAE 10 MIL-L-2104C engine oil in the FAMECE hydraulic system has not been identified in FAMECE DT II. A commercial factory fill oil that does not correspond to the SAE 10 Grade MIL-L-2104C specification was used as the factory fill product for the five vehicles that served as the basis of this report.

- Cold starting problems reported in FAMECE DT II were the result of the use of diesel fuel of marginal quality.

V. RECOMMENDATIONS

Based on the observations and conclusions drawn from this test, it is believed that the following recommendations should be considered:

- Instruct vehicle operators in proper cold starting and engine shutoff procedures and/or modify engine bearings in order to reduce bearing wear. The effectiveness of these procedures can be monitored by the continuation of the engine oil analysis program.
- Evaluate the effectiveness of SAE 10 Grade MIL-L-2104C oil in the FAMECE hydraulic system. An inspection of hydraulic component parts for wear should be part of this evaluation.
- Investigate the possibility of modifying the fuel filter/water separator system to be more fuel tolerant.

Table B-1. FAMECE Test Equipment

Power Modules (Serial No.)	Work Unit Section	Hours at Start of Test	Power Section Hours at End of Test	Lubricant Type
446 X 104	Grader I	273	1061	Comm oil[2]
105	Loader	153	1103	Comm oil
106	Distributor I	97	901	Comm oil
107[1]	Dozer	78	824	Ref oil[3]
108[1]	Dumper I	20	1266	Ref oil
110	Tamping Foot	110	406	Ref oil
112	Smooth Wheel	63	355	Ref oil
113	Dumper II	26	400	Comm oil
114	Scraper	29	251	Comm oil
115	Distributor II	10	247	Comm oil
116	Grader II	---	540	Comm oil

[1] These units used a silicone brake fluid.

[2] Commercial oil used for hydraulic fluid, crankcase, and transmission lubrication.

[3] Reference oil used for hydraulic fluid, crankcase, and transmission lubrication.

Table B-2. FAMECE Factory-Fill 10 Grade Lubricants

Oil Type	Commercial Oil	Reference Oil
Properties:		
Viscosities, cSt		
@ 100° F	38.72	47.0
@ 210° F	5.97	6.7
Index	107.72	10.3
TAN	1.74	2.5
TBN	9.26	12.7
Insolubles, %		
Pentane	0.012	0.02
Pentane w/Coag.	0.004	0.01
Benzene	0.00	0.02
Benzene w/Coag.	0.017	0.01
Gravity, °API @ 60° F (15.5° C)	29.5	28.3
Flash Point, °F	435° F (224° C)	417° F (214° C)
Pour Point, °F	-11° F (-24° C)	-24° F (-31° C)
Carbon Residue, %	1.45	1.7
Sulfated Ash, %	1.47	1.7
Elements:		
Nitrogen, % wt	0.330	0.06
Boron, p/m	13	-----
X-Ray Flor, %		
Barium	0.2060	-----
Calcium	0.3080	-----
Chlorine	0.0120	<0.01
Copper, p/m	<25	-----
Phosphorus	0.1000	0.12
Sulfur	0.2900	0.42
Zinc	0.0800	-----
Atomic Absorption, p/m		
Barium	1910	<50
Calcium	2932	4400
Copper	<1	-----
Magnesium	88.0	22
Sodium	11.0	20
Zinc	692.0	800

NOTE: "Less than" symbol (<) used to indicate lowest detection level of method.

Table B-3. FAMECE Factory-Fill 30 Grade Lubricants

Oil Type	Commercial Oil	Reference Oil
Properties:		
Viscosities, cSt		
@ 100° F	119.4	121.0
@ 210° F	12.15	12.0
Index	99.54	101
TAN	1.70	2.3
TBN	6.75	13.9
Insolubles, %		
Pentane	0.018	0.04
Pentane w/Coag.	0.004	0.04
Benzene	0.00	0.03
Benzene w/Coag.	0.008	0.01
Gravity, °API @ 60° F (15.5° C)	27.3	25.5
Flash Point, °F	450° F (232° C)	433° F (233° C)
Pour Point, °F	-7° F (-22° C)	+2° F (-17° C)
Carbon Residue, %	1.13	2.1
Sulfated Ash, %	0.94	1.6
Elements:		
Nitrogen, % wt	0.0660	0.07
Boron, p/m	<1	-----
X-Ray Flor, %		
Barium	<0.0220	-----
Calcium	0.2350	-----
Chlorine	0.0130	<001
Copper, p/m	<25	-----
Phosphorus	0.1200	0.13
Sulfur	0.4400	0.48
Zinc	0.0900	-----
Atomic Absorption, p/m		
Barium	<50	<50
Calcium	2531	4400
Copper	<1	-----
Magnesium	8.0	26
Sodium	22.0	10
Zinc	748.0	700

NOTE: "Less than" symbol (<) used to indicate lowest detection level of method.

Table B-4. Summary of Oil Analysis Data

Vehicle Type: Grader

Power Section: 446X104

Mileage	Wear Metals						Additive Metals			
	Aluminum	Iron	Chromium	Copper	Lead	Silicone*	Phosphorous	Barium	Zinc	Calcium
					Engine Oil					
273	20	5	3	23	10	3	720		820	1350
500	8	20	2	30	3	6	750	90	860	1800
750	20	40	0	18	6	10	720	10	1100	4500
1000										
					Transmission Oil					
273	37	86	2	280	70	6	650		500	3600
500	22	47	0	300	40	6	700	1000	860	4500
750	35	45	3	92	16	10	780	300	530	
1000	25	37	2	88	7	7	640	270	600	
					Hydraulic Fluid					
273	40	8	2	6	1	8	680		860	3200
500	18	4	0	5	0	3	750	1100	1100	5000
750	33	9	1	22	1	13	600	860	540	
1000	32	10	1	19	1	11	590	810	590	

*

Table B-5. Summary of Oil Analysis Data

Vehicle Type: Loader

Power Section: 446X105

	Wear Metals						Additive Metals			
Mileage	Aluminum	Iron	Chromium	Copper	Lead	Silicone*	Phosphorous	Barium	Zinc	Calcium
					Engine Oil					
154	26	10	2	5	9	7	680		800	1800
250										
500	18	26	0	200	17	3	650	50	700	7000
750										
1000	54	73	28	6	1	12	530	0	030	
					Transmission Oil					
154	40	55	3	500	75	8	580		800	3000
250	38	80	2	400	50	8	550		500	3200
500	21	57	0	350	25	5	750	1080	1100	6500
750										
1000	28	68	2	160	64	10	640	500	650	
					Hydraulic Fluid					
154	38	7	1	5	1	8	660		860	3700
250	34	16	3	8	8	6	700		650	3500
500	18	11	0	8	0	4	755	1300	1000	6000
750										
1000	26	18	3	7	1	11	650	1050	690	

*

Table B-6. Summary of Oil Analysis Data

Vehicle Type: Water Distributor I

Power Section: 446X106

	Wear Metals						Additive Metals			
Mileage	Aluminum	Iron	Chromium	Copper	Lead	Silicone*	Phosphorous	Barium	Zinc	Calcium
					Engine Oil					
96	25	8	4	8	10	12	750		680	1650
250										
500	21	27	0	5	6	0	640	10	860	5500
750	26	28	5	5	1	6	530	0	570	
1000										
					Transmission Oil					
96	36	50	2	215	55	8	550		500	3100
250	21	35	0	135	17	0	700	600	1000	7500
500	22	50	0	240	130	0	500	330	1100	6500
750	29	35	3	88	4	10	990	0		
1000										
					Hydraulic Fluid					
96	36	9	2	17	6	12	700		600	4300
250	21	2	0	12	0	0	750	1200	1100	6000
500	17	5	0	12	12	6	700	1100	1000	5000
750	29	8	1	14	4	11	640	1200	570	
1000										

*

Table B-7. Summary of Oil Analysis Data

Vehicle Type: Dozer

Power Section: 446X107

	Wear Metals					Additive Metals				
Mileage	Aluminum	Iron	Chromium	Copper	Lead	Silicone*	Phosphorous	Barium	Zinc	Calcium
					Engine Oil					
78	32	14	1	65	10	20	550		450	4000
250	30	7	6	94	25	16	750	40	1200	6000
500	23	38	0	52	13	3	660	0	1100	7500
750										
1000										
					Transmission Oil					
78	47	74	4	1100	200	12	750		480	3700
250	31	76	0	550	250	5	800	380	780	5000
500	33	60	9	700	130	3	820	220	1100	5000
833	32	29	0	130	34	11	580	0	500	
					Hydraulic Fluid					
78	36	7	2	7	8	8	700		600	5200
250	17	1	0	6	2	3	750	920	1000	6000
500										
833	32	13	1	12	1	9	750	820	720	
1000										

*

Table B-8. Summary of Oil Analysis Data

Vehicle Type: Dumper

Power Section: 446X108

	Wear Metals						Additive Metals			
Mileage	Aluminum	Iron	Chromium	Copper	Lead	Silicone*	Phosphorous	Barium	Zinc	Calcium
					Engine Oil					
20	44	5	2	8	10	10	680		740	4100
250	45	42	3	18	55	16	580		720	4400
500	20	20	3	10	6	0	600	0	1100	7500
750	34	38	17	27	90	20	650	0	950	6000
1000	33	60	11	17	68	9	530	0	580	
					Transmission Oil					
20	48	10	2	95	45	8	760		880	1200
250	45	25	2	200	60	7	680		860	5700
500	20	9	0	86	18	5	740	0	1000	6000
750										
1000	31	49	2	450	178	6	780	0	630	
					Hydraulic Fluid					
20	43	5	3	3	1	7	760		900	5300
250	45	0	1	5	1	8	760		900	5300
500	22	0	0	6	0	4	800	540	1100	6000
750	22	1	0	7	0	5	770	560	800	6000
1000	31	7	2	12	1	9	780	560	650	

*

Table B-9. Viscosity and Insoluble Content of Engine Oils

	Commercial Oil 30 Grade			Reference Oil 30 Grade	
	Grader (446X104)	Loader (446X105)	Distrib (446X106)	Dozer (446X107)	Dumper (446X108)
	Vis (cSt @ 210° F) Insol [1]	Vis (cSt @ 210° F) Insol	Vis (cSt @ 210° F) Insol	Vis (cSt @ 210° F) Insol	Vis (cSt @ 210° F) Insol
Viscosity of New Oil		12.1		12.2	
Initial Oil [2] Sample	11.5	10.9 0.034	11.8	12.5 0.50	12.7 0.02
1st Oil Drain	11.6			13.0 0.19	13.0 0.26
2nd Oil Drain	13.3	12.7	13.4	13.3	13.7
3rd Oil Drain			13.4		14.2

[1] Pentane insolubles determined by ASTM method D893.

[2] Initial samples taken on delivery of vehicles to Ft. Belvoir. Operating hours were grader (273), loader (153), distributor (97), dozer (78), and dumper (20).

APPENDIX B-A

REFERENCE OIL PROGRAM

FOR

FAMECE DT II

PURPOSE

To identify possible wear problems, oil/system compatibility, and oil degradation in FAMECE equipment.

SCOPE

A set of six vehicles (one each dumper, scraper, grader, distributor, dozer, and compactor) from the FAMECE DT II test group will utilize reference grade MIL-L-2104C fluids in engines, transmissions, and hydraulic systems, and a silicone-based brake fluid in the power and work sections. This set of vehicles will be monitored during testing by periodic oil sampling/analysis to determine overall MIL-L-2104C/FAMECE system compatibility as reflected by wear metal analysis, or quality, and potential degradation of lubricants. Silicone brake fluid will be evaluated on a performance basis.

TEST FLUIDS/LUBRICANTS

The following test fluids/lubricants will be furnished by the Fuels and Lubricants Division, Energy and Water Resources Laboratory, MERADCOM:

1. For Factory Fill:

a. Twelve 55-gallon drums of Grade 10, MIL-L-2104C, Reference Engine Oil (OE/HDO-10).

b. Two 55-gallon drums of Grade 30, MIL-L-2104C, Reference Engine Oil (OE/HDO-30).

c. Two 1-gallon cans of silicone-based brake fluid.

2. For Operations:

a. Six 55-gallon drums of Grade 10, MIL-L-2104C, Reference Engine Oil (OE/HDO-10).

b. Six 55-gallon drums of Grade 30, MIL-L-2104C, Reference Engine Oil (OE/HDO-30).

c. One 1-gallon can of silicone-based brake fluid.

The factory-fill engine lubricant will be forwarded directly from the manufacturer to Clark Equipment Company, FAMECE Facility (ATTN: CPT S. Miszkelvitz); Meadowbrook and Dewey Streets; Benton Harbor, MI 49022.

It is estimated the lubricants will arrive at Clark Equipment by 30 Apr 77. The remaining materials will be supplied from MERADCOM to the equipment manufacturer or test site, as applicable.

TEST PROCEDURE

The lubricant testing portion of DT II will be according to the following procedure:

1. Factory Fill and Equipment Identification:

a. Reference Grade MIL-L-2104C, OE/HDO-10 and OE/HDO-30: The transmissions, scraper, hydraulic systems, and crankcases of the six referenced vehicles should be filled initially with the reference grade OE/HDO-10 and OE/HDO-30 fluids in accordance with the equipment lubrication orders. After fill, these vehicles should be identified by spraying the filling ports with a suitably colored heat-resistant paint (e.g., bright red).

b. Silicone-Based Brake Fluid: Silicone brake fluid should be used in place of the HBA VVB 680 brake fluid in these six vehicles. General hygiene should be practiced when handling this fluid. Employees should be instructed that silicone is a contact eye irritant and that hands should be washed well before rubbing eyes. Spills on metal surfaces that are to be spray painted can be cleaned with any organic type solvent.

2. Field Testing: During vehicle testing, compatibility will be monitored through used oil analysis. Oil sampling will be conducted on a 200-hour interval basis either by extraction of a small sample (8 oz) of fluid from the filling ports by use of syringe and length of tubing or by collection of a large sample (32 oz) during engine and transmission oil drain. Oil sampling will be performed by personnel from the Fuels and Lubricants Division, Energy and Water Resources Laboratory, MERADCOM; however, drain sample collection by maintenance personnel may be required if drain intervals are irregular. If such assistance is required, labeled 32-oz sample bottles will be supplied by this Laboratory.

a. Hydraulic fluid samples will be taken on a 200-hour interval basis and analyzed for water content, particulate contamination, viscosity changes, and other tests as appropriate.

b. Transmission and crankcase oils will be analyzed in accordance with the table. Additive depletion in transmission fluid will be monitored by infrared techniques and other tests as appropriate.

c. Sample analysis will be performed by MERADCOM.

d. Reports of findings will be forwarded to the Product Manager's Office for FAMECE/UET.

New and Used Oil Sampling and Analysis Schedule

Type Sample and Analysis*	New Oil	Hours of Engine Operation				
		200	400	600	800	1000
Type Sample**	1	2	2	2	2	2
Viscosity						
@ 210° F	X	X	X	X	X	X
@ 100° F	X	X	X	X	X	X
Total Acid No.	X	X	X	X	X	X
Total Base No.	X	X	X	X	X	X
Insolubles						
Pentane (A & B)	X	X	X	X	X	X
Benzene (A & B)	X	X	X	X	X	X
Gravity	X		X		X	
Flash Point	X		X		X	
Pour Point	X		X		X	
Carbon Residue	X		X		X	
Sulfated Ash	X		X		X	
Wear Metals***	X	X	X	X	X	X

* Analyses to be conducted using the following methods:

Analysis	Method
Viscosity (210° F and 100° F)	D445
Total Acid Number	D664
Total Base Number	D2876
Insolubles (Pentane and Benzene)	D893 (Procedures A and B)
Flash Point	D92
Pour Point	D97
Carbon Residue	D524
Sulfated Ash	D872
Wear Metals	Atomic Absorption

** 1 = 32-oz sample; 2 = 8-oz sample
*** Wear metals (Mo, Pb, Fe, Al, and Cu)

3. Information to be Recorded: The following information should be maintained during the course of the test in the form of a test diary:

a. Oil Consumption: Date, hours, miles, and quantity added.

b. Engine Maintenance: Date, action, and reason (i.e., scheduled or unscheduled).

c. Changes in engine power/performance.

FUEL QUALITY

If desired, fuel quality evaluations can be made by this Laboratory.

APPENDIX B-B

INSPECTION OF ENGINE AND TRANSMISSION FROM FAMECE DUMPER I

DEPARTMENT OF THE ARMY
US ARMY MOBILITY EQUIPMENT RESEARCH & DEVELOPMENT COMMAND
FORT BELVOIR, VIRGINIA 22060

jtw/43576

DRDME-GL

22 February 1978

MEMORANDUM FOR RECORD

SUBJECT: Inspection of Engine and Transmission From FAMECE/UET Unit No. 3

On 15 and 16 February 1978, Messrs. Bowen and Kennedy performed the subject inspection. The following provides data covering the items inspected and summarizes the inspection findings:

ENGINE

Make: Cummins
Model: VT555-C240
Serial No: 20160902

TRANSMISSION

Make: Clark
Model: LT-7853
Serial No: 63013T

OPERATION

Unit: FAMECE Dumper
Service: Long and short haul, fully loaded
Time: 1250 Hrs

INSPECTION (Engine)

Component			Description
Pistons	General		Pistons were in satisfactory condition. Deposits were low. All rings were free and in good condition. All skirts showed moderate scratching resulting from dirt ingestion. Also the thrust side of #7 and #8 pistons showed several small areas of light scuffing which could have resulted from the dirt ingestion or from cold starting.
	No. 1	Rings	Free and in good condition (wear ½ way across 2nd compression)
		Land 2	100% coverage with LC to MC deposits
		Land 3	100% coverage with lacquer deposits (BL-AL)
		Skirt	Lt - Medium scratching

DRDME-GL 22 February 1978
SUBJECT: Inspection of Engine and Transmission From FAMECE/UET Unit No. 3

INSPECTION (Engine) (Cont'd)

Component			Description
Pistons	General		Cont'd
	No. 2	Rings	Same as #1
		Land 2	Same as #1
		Land 3	100% coverage with AL-LAL deposits
		Skirt	Lt - Med scratching
	No. 3	Rings	Same as #1
		Land 2	Same as #1
		Land 3	40% coverage with LC-MC, 60% coverage with BL-AL deposits
		Skirt	Same at #1
	No. 4	Rings	Same as #1
		Land 2	Same as #1
		Land 3	20% coverage with LC, 50% with AL-LAL and 30% clean
		Skirt	Same as #1
	No. 5	Rings	Same as #1
		Land 2	Same as #1
		Land 3	50% coverage with AL-LAL, 50% clean
		Skirt	Same as #1
	No. 6	Rings	Same as #1
		Land 2	80% coverage with LC-MC, 10% BL-DBRL and 10% clean
		Land 3	15% coverage with LC, 55%
		Skirt	Same as #1
	No. 7	Rings	Same as #1
		Land 2	90% coverage with LC-MC, 10% BL-DBRL
		Land 3	30% coverage with AL-LAL, 70% clean
		Skirt	Heavy scratch, several small areas of light scuffing
	No. 8	Rings	Same as #1
		Land 2	Same as #1
		Land 3	85% coverage with LC-MC, 15% with BL-AL
		Skirt	Heavy scratching, one small area of light scuffing

INSPECTION (Engine) (Cont'd)

Component	Description
Connecting Rod Bearings	All bearings showed scratching which was heaviest on Nos. 3, 5, 6, and 8 bearings. In the case of the No. 6 bearing, the scratching was into copper underlay which showed heavy pitting. Pitting of the overlay was observed on all bearings.
Main Bearings	All bearings showed heavy scratching and wiping. The copper underlay was showing in varying degrees on all bearings and the No. 4 (rear) bearing showed a large quantity of the copper removed. Also pitting of the copper underlay was observed on the No. 3 bearing.
Cam Shaft & Valve Train	Appeared normal with the exception of the inner bearing journals, which showed a significant amount of scratching. The drive gear appeared normal, as did other valve train components.
Crankshaft	All main and connecting rod journals showed scratching
Thrust Washer	Showed severe scoring with large quantities of copper from main bearings embedded in surface.
Combustion Chamber	Showed very low deposits (note valves were not removed).
Other	Oil pan, valve covers, valve deck, etc. were free of sludge and lacquer deposits.

DRDME-GL 22 February 1978
SUBJECT: Inspection of Engine and Transmission From FAMECE/UET Unit No. 3

INSPECTION (Transmission)

The transmission appeared to be in satisfactory condition. Gears and bearings showed normal wear patterns. Although clutch packs showed some transfer of material between plates, their condition was considered acceptable.

T. BOWEN

P. KENNEDY

APPENDIX B-C

FUEL PROBLEMS ASSOCIATED WITH FAMECE DT II

DEPARTMENT OF THE ARMY
US ARMY MOBILITY EQUIPMENT RESEARCH & DEVELOPMENT COMMAND
FORT BELVOIR, VIRGINIA 22060

DRDME-GL

3 February 1978

MEMORANDUM FOR RECORD

SUBJECT: Fuel Problems Associated with FAMECE Units

1. This office was requested on numerous occasions to evaluate reported fuel-related problems that surfaced during DT-II testing of FAMECE equipment at Ft. Belvoir, North Area. In view of the involvement of these on-site investigations, a chronological account of the problems, causitive factors, and corrective actions/potential solutions are presented.

2. In late August 1977, fuel filter plugging of one FAMECE power unit was noted. Subsequent analysis of the filter unit revealed the contaminent to be primarily iron oxide with trace amounts of silica and diesel fuel degradation products. This problem was subsequently traced to rusting of the interior bare metal surface of the fuel storage tank. These findings and recommendations were provided in a DF dated 28 September 1977 to DRCPM-FM-TM (Incl 1). The corrective action involved a change in the fuel storage location.

3. In early December 1977, difficulties were reported in the starting of the FAMECE power modules. From the initial reports forwarded to this office, it was inferred that fuel "waxing" or "freezing" was considered to be suspect. On 14 December 1977, diesel fuel was sampled from the fuel tank and filter units of one of the effected FAMECE units (SCRAPER). Since "waxing" had been mentioned, our initial concern was to determine whether the proper diesel fuel was being used. To ascertain this, the fuel's cloud point was suspect. More specifically, the critical fuel factor affecting low-temperature operability is the cloud point. This is that temperature point wherein the first appearance of "wax" occurs as a precipitate. This separated wax can create a variety of problems such as fuel filter plugging, fuel line stoppage/restrictions, etc. The presence of trace water can also contribute to this problem when operating below the freezing point of water. Federal Specification VV-F-800b, "Fuel Oil, Diesel" provides a temperature percentile guide for specifying the cloud point of diesel fuel to be procured. For December, the diesel fuel to be used/procured in Virginia should have a cloud point not to exceed 26° F. The sample obtained from the fuel tank of the malfunctioning FAMECE had a cloud point of 46° F which is in excess of the specified limit indicating possible fuel waxing problems. This suspect fuel was traced to the fuel

stored in No. 1 Storage Tank, as this fuel had a cloud point of 48° F. It can be concluded that the relatively high cloud point of the diesel fuel being used was contributing to engine start-up failures as a result of the unusually cold temperatures being experienced in early December.

4. The No. 1 Storage Tank has a fill capacity of 10,000 gallons, and its construction is such that the fill pipe end is fixed at 3 inches above the tank bottom. At the time of sampling mentioned above, 2000 gallons of diesel fuel remained in this tank. On 14 December however, a delivery of 8000 gallons of diesel fuel was received and introduced into No. 1 Storage Tank. Subsequent analysis of the co-mingled fuel in No. 1 Storage Tank revealed the diesel fuel to have a cloud point of 64° F. This relatively high cloud point obviously was suspect relative to the limitation imposed under VV-F-800b for December (cloud point should not exceed 26° F). To ascertain whether fuel contamination, comingled product, etc., had occurred, Ft. Belvoir Quality Assurance Program which provides for procurement product monitoring became involved. This program involves sampling of diesel fuel from delivery trucks prior to or during dispensing into holding tanks. The samples are subsequently forwarded to New Cumberland Army Depot, Petroleum Field Office (East) for analysis in conformance to specification requirements. Fuel samples (Nos. 3958-78 and 3959-78) obtained from the 14 November 1977 and 14 December 1977 deliveries to No. 1 Storage Tank which had been forwarded to New Cumberland Army Depot were reported to be in accordance with the limits required under VV-F-800b, (Incl 2). Since their findings indicated that specification fuel was delivered in November and December, a possible explanation as to the wide discrepancies in Cloud Point may be related to water adsorption or other heavier product contamination remaining in the fuel system. The water contamination could have been attributed to the 1/2 to 1 inch of water bottoms in No. 1 Storage Tank. In order to minimize and/or eliminate this problem, removal of water bottoms and adequate quality surveillance as specified in MIL-STD-HDBK-200 E was and is recommended.

5. In late December and early January 1978, field personnel attempted to remove water in the fuel system by the non-authorized procedure of adding alcohol to scavenge (eliminate) separated water in fuel tanks. Samples of suspect diesel fuel forwarded to this office were characterized as having two discrete phases; namely, alcohol and diesel fuel which is typical of alcohol-petroleum fuel mixtures where moisture is present. Upon receipt of these samples, FAMECE/UET personnel were subsequently advised as to the proper "diesel fuel anti-icer" specified in TM 9-207/TO 36-1-40 "OPERATION AND MAINTENANCE OF ORDNANCE MATERIEL IN COLD WEATHER," which states (under paragraph 1-31d(2)a) the following:

"Add Inhibitor, Icing, Fuel System (MIL-I-27686) to diesel fuel at the ratio of 1 pint of additive to 40 gallons

of fuel at the time of refueling. Fuel filters must be drained immediately after operation to remove additive-water mixtures from the bottom of the filters."

This inhibitor, referred to as FSII which is essentially ethylene glycol monomethyl ether, is presently under requisition for use in the remainder of the FAMECE DT-II testing program.

6. On 13 January 1978, the DUMPER Power Section experienced a noticeable power loss which was traced to plugging of the main (primary) fuel filter. Subsequent analysis of the contaminant indicated it to be principally iron oxide. The most probable cause of this contamination would be a result of rust formation occurring in the vehicular fuel tank or the fuel trucker assigned to the North Area.

7. A sample of diesel fuel was obtained from the truck delivery to No. 1 Storage Tank on 23 January 1978. Subsequent analysis revealed this delivery lot of product has a cloud point of 24° F which met the specification requirement of VV-F-800b (a 24° F maximum cloud point limit is required for the month of January). This inferred the previous problems to have been caused by contamination existing in No. 1 Storage Tank. In view of our RDTE responsibility in fuel decontamination, this office suggested a fuel separator be used and, subsequently, offered an available unit for property transfer to the North Area.

8. A series of diesel fuel samples were delivered to this office on 27 January 1978. These represented the first vehicular fuel samples after the January delivery. Subsequent analysis of these samples revealed a gradual improvement in fuel quality; however, it was noted that fuel-alcohol contamination, water contamination, and rust continue to remain as an impairment to satisfactory fuel system performance. A summary listing of all fuel sample analysis, sampling dates, observations, etc. completed thus far is provided for your review in Incl 3. If further operational difficulties with FAMECE fuel system occur or if these units are to undergo future testing at other locations, draining and flushing of fuel tanks is strongly recommended.

(signed)

3 Incl
as

PAUL J. KENNEDY
Chemist
Fuels & Lubricants Division

DRDME-GL Fuel Filter Sludge in FAMECE Power Unit

FAMECE/UET C, Fuels & Lubricants 28 Sep 77
DRCPM-FM-TM (Mr. H. Mayo) Kennedy/cc/44595

1. Reference is made to the fuel filter sludge sample collected on 22 Aug 77 as part of the oil analysis program.

2. This sludge consisted of 59% Iron Oxide and 1.5% Silica and contained only minimal amounts of fuel deterioration products. Further information on the chemical composition of this material can be found in the attached report of chemical and analysis.

3. Discussion with field personnel indicated that this problem surfaced after addition of new fuel to an underground storage tank. The chemical analysis indicates that the source of the sludge was the result of the mixing of tank corrosion products with the fuel oil.

4. Remedial action at the north area in response to this problem involved use of a fuel vehicle for distribution of fuel and conversion of the underground storage tank to gasoline. This corrective action has eliminated the fuel sludge problem.

5. If reuse of the original underground storage tank is planned, then installation of a fuel filter on the pump should be considered. Alternately, a significant reduction of sludge levels could be achieved by allowing approximately two days for particulate matter to settle out of the fuel after agitation.

(signed)

MAURICE E. LEPERA
Chief, Fuels and Lubricants Division

(Incl 1)

U.S. ARMY FUELS AND LUBRICANTS RESEARCH LABORATORY
8500 CULEBRA ROAD-P.O.DRAWER 28510
SAN ANTONIO, TEXAS 78284

File: B-3

USAFLRL 9 September 1977

Commander
U.S. Army Mobility Equipment
Research & Development Command
Attn: DRDME-GL, Messrs. M.E. LePera
and Paul Kennedy
Ft. Belvoir, VA 22060

Re: Laboratory Report of Analyses for Sludge from FAMECE Vehicle Fuel Filter.

Dear Sir:

1. The fuel filter sludge sample, coded AL-7075-X (received 6 September 1977, from your facility) was pentane washed, air and 210° F oven dryed. Only 0.4% of the dry sample was soluble in BAM. IR #1286 for the dry sample and IR #1284 for the BAM soluble portion of the sample are attached. Very little organic fuel deterioration products were present in the dry sample. No evidence of microbiological debris was apparent. The XRF data for the dry AL-7075-X sample gave 0.4% Si, 0.2% S, and 41% Fe.

2. The data in item (1) suggest that the filter sludge (a representative sample of dry AL-7075-X is enclosed) is primarily rust due to fuel tank corrosion.

3. It is suggested that additional filters be obtained and placed in individual one-gallon cans for shipment to AFLRL. Inspection of the fuel tank(s) for evidence of corrosion is also requested (to include photographic documentation).

4. Further details or assistance will be provided as requested.

Very truly yours,

R.D. Quillian, Jr.
Director

(signed)

Leo L. Stavinoha
Sr. Research Chemist

RDQ/LLS/rr

Attachment to Incl 1

DEPARTMENT OF THE ARMY
US ARMY GENERAL MATERIEL AND PETROLEUM ACTIVITY
PETROLEUM FIELD OFFICE (EAST)
NEW CUMBERLAND ARMY DEPOT, NEW CUMBERLAND, PA 17070

10 January 1978

STSGP-PE

SUBJECT: Quality Surveillance Test Results

Ft. Belvoir
USA Mobility Equip Research
and Devel Center
Whse 335
Alexandria, VA 22314

MF: MERADCOM Testing Area
Ft. Belvoir

1. Laboratory analysis of petroleum sample forwarded by your installation indicates:

a. ____ Product meets specification requirements for tests performed.

b. ____ Product deviates slightly from specification requirements but is considered suitable for use.

c. ____ Product does not meet specification requirements. See remarks.

2. Sample information:

a. Product: F.O. Diesel, DF2
b. Item Number: 1035-34
c. Lab Number: 1969 1970
d. Sample Number: 3958-78 3959-78
e. Lead Content (grams per gallon):
f. % Sulfur:
g. % Sulfur permitted by contract specification:

3. Remarks:

* 3958-78 - Diesel Fuel Sampled 14 Nov 1977

* 3959-78 - Diesel Fuel Sampled 14 Dec 1977

CF: HQDA (DAEN-FEU)
Post Engineer

GEORGE R. MARTELLO
Chief, Petroleum Field Office (East)

(Incl 2)

STSGP-PE FL 716 (Revised)
27 Jun 77

Fuel Quality Monitoring

Sample Origin	Date Sampled	Cloud Point °F	Specification Requirement	Remarks
Fuel Delivery Truck	14 Nov 77	24	36 Max	NCAD Sample 3958-78*
No. 1 Storage Tank	14 Dec 77	48	26 Max	—
Scraper Fuel Tank	14 Dec 77	46	26 Max	Unit experiencing starting problems
Scraper Fuel Filter Unit	14 Dec 77	46	26 Max	—
Fuel Delivery Truck	14 Dec 77	16	26 Max	NCAD Sample 3959-78*
No. 1 Storage Tank	14 Dec 77	64	26 Max	—
No. 1 Storage Tank	11 Jan 78	46	24 Max	—
Fuel Truck	14 Jan 78	46	24 Max	—
Loader Fuel Tank	12 Jan 78	40	24 Max	Alcohol phase noted
Loader Fuel Filter Unit	12 Jan 78	42	24 Max	Alcohol phase noted
Dumper Fuel Filter Unit	13 Jan 78	48	24 Max	Alcohol phase noted
Fuel Delivery Truck	23 Jan 78	24	24 Max	—
No. 1 Storage Tank	25 Jan 78	38	24 Max	—
No. 1 Storage Tank	26 Jan 78	36	24 Max	—
Dozer Fuel Tank (Bottoms)	25 Jan 78	34	24 Max	Separated water layer noted
Loader Fuel Tank	25 Jan 78	28	24 Max	Alcohol phase noted
Dumper Fuel Tank	27 Jan 78	24	24 Max	—
Dumper Fuel Filter Unit	27 Jan 78	24	24 Max	Dirt contamination evidenced

*Samples analyzed by New Cumberland Army Depot (NCAD)

(Incl 3)

APPENDIX C

FINDINGS AND RECOMMENDATIONS

MAJOR INCIDENTS

	Incident	Cause	Suggested Correction
1	Brake throttle foot valve fails to operate	Air supply insufficient to operate throttle foot valve and windshield wiper simultaneously	Install faster recovery compressor. Install larger air storage tanks. Relocate governor for easier access to adjustment.
2	Automatic drain valve on reservoir broken off	Drain valve located on underside of power section is vulnerable to damage	Relocate drain valve
3	Transmission fails to shift	Defective shift solenoid (moisture enters coil causing short and eventual burn out)	Hermetically sealed coil
4	Electrical relays malfunction	Pitted relay contacts cause high resistance in circuit	Install heavier duty relay
5	Grader moldboard cracked	Unknown; cracks 16"-18" long located 45" and 72" from left end of moldboard	Determine cause of problem and make appropriate correction
6	Grader service brakes seize	Piston on disc brake seized and would not retract	Determine cause of problem and make appropriate correction
7	Throttle stuck in high idle	Jam nut on throttle linkage loosens under vibration, allowing linkage to get out of adjustment	Add locknut

APPENDIX C

MAJOR INCIDENTS (Continued)

	Incident	Cause	Suggested Correction
8	Throttle stuck in high idle	Throttle linkage rod ends disconnected as a result of excessive wear in ball end retainer	Change material (contractor furnished MWO at termination of test)
9	Throttle stuck in high idle	Stones wedged under throttle pedal	Redesign throttle pivot
10	Fuel leaking on engine	Crack in fuel pump housing	Corrected (manufacturer installed redesigned pump)
11	Fuel tank mounting bracket fractured	Vibration	Contractor furnished MWO
12	Hydraulic tank mounting bracket fractured	Vibration	Contractor furnished MWO
13	Dolly wheels/cylinders damaged	Wheels drifting down when vehicle is in work mode	Contractor furnished MWO
14	Coupling lockring jammed in locked position	Dirt between inner and outer ring	Add second hydraulic cylinder on opposite side of lockring
15	Flared metal tubing on scraper hydraulic pump fractured	Vibration	Determine cause of problem and make appropriate correction
16	Operator's foot slips off brake pedal	Oil leaking from steering valve (defective seal)	Problem corrected (retrofit seal kit installed)

APPENDIX C

MAJOR INCIDENTS (Continued)

	Incident	Cause	Suggested Correction
17	Dumper tailgate fell off	Quick-disconnect pin fractured and fell apart	Redesign pin
18	Grader power section oscillates	Grader axle stops fractured and separated	Redesign stops
19	Power inadequate to drive grader	Lower bearings in grader transfer case failed	Determine cause of problem and make appropriate correction
20	Mud cleaners on T.F. Compactor loosen (cleaner assembly removed to prevent damage)	Vibration	Additional mounting hardware/ locknuts
21	Tire cleaners jam against tires; locking handle fractures	Tire cleaners on S.D. Compactor bounce out of disengage position (cleaner assembly removed to prevent damage)	Redesign
22	Loader control rods break	Rod diameter/material inadequate for load	Increase diameter of control rods or change material
23	Scraper hydrostatic drive inadvertently shifts rear wheels into reverse while power section is travelling forward	Unknown	Determine cause of problem and make appropriate corrections

APPENDIX C

MAJOR INCIDENTS (Continued)

	Incident	Cause	Suggested Correction
24	Delayed departure	Condensation in air system freezes and prevents manifold valve from seating; throttle movement restricted; air system cannot charge to operating capacity	Equip air system with alcohol evaporator
25	Operator lost control of vehicle when negotiating turns and when descending grades	Power section lateral vibration	Determine cause of problem and make appropriate corrections

APPENDIX C

FINDINGS AND RECOMMENDATIONS

MINOR INCIDENTS

	Incident	Cause	Suggested Correction
1	Getting underway delayed	Slow buildup of air pressure	Use faster recovery compressor
2	Hourmeter records fast time	Voltage spike occurs when transmission shifts, causing meter to jump ahead	Add capacitor (field installation corrected problem)
3	Components damaged by end of grader blade	Blade does not clear components when moldboard is at extreme position	Add limit stop/switch to moldboard
4	Battery cable insulation cut by engine hood	Insufficient clearance between hood and cable	Reroute cables (contractor-furnished MWO corrected problem)
5	Dozer blade reflectors damaged when excavating	Location of reflectors	Relocate reflectors
6	Loader fender bracket fractured at weld	Fender flexing	Increase size of bracket or add additional bracket to reduce fender vibration
7	Mirror mounting bracket fractured	Brackets flexing under vibration	Heavier bracket
8	Pivot pin in auxiliary steering control bracket fractured	Vibration	Redesign pin to increase surface area of weld

APPENDIX C

MINOR INCIDENTS (Continued)

	Incident	Cause	Suggested Correction
9	Loader clam control plunger separates from plunger control	Excess wear in plunger arm groove	Change plunger arm material
10	Taillights damaged when operator backed dumper into obstruction	Operator turns off rear floodlights to eliminate blinding glare from rockguard	Relocate rear floodlights; add taillight guard
11	Grader accidentally hits obstacles	Front lights cannot be adjusted to illuminate area immediately in front of grader	Add tilt adjustment to lights

APPENDIX D

MAINTENANCE DATA

```
03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,935
 D        S OHF    A    I S E E T Q A C   G  CD     CH     MH     M DT                                              E
 A        H OCH    G    A / C C M A M S   R  OL     LO     AO     E IT                                              P
 T        F OUC    T    S U H H '   T F   P  NY     OU     NU     N AM                                              R
 E        T HRS    N    K     R S            T      CR     R       GE                                               S
                                                    KS                    DESCRIPTION

29/07/77 1 019.6 001.0  S O O A C N N 1507  00.0  00.1  00.1 1  00.0 INSPECTION OF POWER SECTION/DUMPER ON     1.
                                                                     RECEIPT. EPR FB-1. DOLLY SAFETY CHAIN
                                                                     BROKEN (CLASP).

29/07/77 1 019.6 001.0A S O O A C N N 1802  00.0  00.2  00.4 2  00.0 INSTALL WINDSHIELD AND WIPER ASSEMBLY.

29/07/77 1  19.6 001.0B S O O A C N N 2200  00.0  02.0  04.0 2  00.0 INSTALL CANVAS CAB SUPPORTING
                                                                     STRUCTURE.

29/07/77 1 019.6 001.0C S O O A C N N 1801  00.0  00.6  01.3 3  00.0 INSTALL ROLL OVER PROTECTION SYSTEM
                                                                     (ROPS).

03/08/77 1 032.1 002.0  U O O A C Y N 1507  00.0  00.1  00.1 1  00.0 REPAIRED BROKEN DOLLY SAFETY CHAIN. EPR   5(1-1)
                                                                     FB-5(1-1)

03/08/77 1  32.8 002.1  U C C A C N N 0000  00.0  00.1  00.1 1  00.0 ADDED 2 QTS ENGINE OIL

05/08/77 1 038.1 003.0  U O O I C Y Y 1201  00.0  00.5  00.5 1  00.0 JAM NUT FELL OFF PARKING BRAKE            7
                                                                     ASSEMBLY. NUT PART NUMBER IS NOT LISTED
                                                                     IN ORG.MAINT. MANUAL-PWR SECTION NEW
                                                                     NUT PUT ON PARKING BRAKE ASSEMBLY AND
                                                                     PARKING BRAKE ADJUSTED. EPR FB-7

PARTS UNKNOWN             GP=000011201 NO=01 LIFE=UNK    JAM NUT ON PARKING BRAKE

08/08/77 1 045.0 004.0A U O O A C Y N 0105  00.0  02.0  02.0 2  00.5 REPLACE CYLINDER HEAD COVER GASKET         12
                                                                     ENGINE SYSTEM FAILURE LEAKING CYLINDER
                                                                     HEADCOVER GASKET NOT IN
                                                                     TROUBLESHOOTING. EPR FB-12

PARTS 5330-00-419-3205    GP=000010105 NO=01 LIFE=       GASKET, CYLINDER HEAD COVER ENGINE, ROAD SIDE

09/08/77 1 061.0 005.0  U O O I C Y Y 1410  00.0  04.8  04.8 1  00.0 REPLACE DEFECTIVE GROUND STEERING PUMP     15
                                                                     STEERING SYSTEM FAILURE EPR FB-15
                                                                     MANUAL WAS NOT THOROUGH, WAS
                                                                     INCOMPLETE, DID NOT ISSUE PROPER
                                                                     WARNINGS OR PROCEDURES. THIS ITEM IS
                                                                     NOT IN MAC CHART OR TROUBLESHOOTING.

PARTS 2501959             GP=000011410 NO=01 LIFE=UNK    PUMP, GROUND STEERING
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03/05/79
MAINTENANCE TASK LOG     TEST ,FAMECE1 TEST ITEM ,935
D        S OHR   A     T S E E T Q A C   G   CD
A        H OON   C     A / C C M A M S   R   OL    CH     MH     M DT
T        F OUD   T     S U H H .   T F   P   HY    LO     AO     E IT
E        T MRS   N     K     R S             T     OU     NU     N AM
                                                   CR     R        GE
                                                   KS                                         E
                                                                       DESCRIPTION            P
                                                                                              R
                                                                                              S
09/08/77 2 064.0 006.0  U C C A C Y N 0000  00.0  00.3  00.3 1  00.0 ADDED 3 GALLONS OF TRANSMISSION OIL DUE
                                                                     TO LOSS WHEN THE NEW GROUND STEER
                                                                     PUMPWAS INSTALLED
09/08/77 2 064.0 006.0A U C C A C Y N 0000  00.0  00.3  00.3 1  00.0 ADDED 4 GALLONS OF HYDRAULIC OIL-DUE TO
                                                                     LOSS WHEN THE NEW GROUND STEER PUMP WAS
                                                                     INSTALLED
11/08/77 1 069.0 006.0B U O O I C Y Y 2406  00.0  01.0  02.0 2  00.0 REARRANGED MAIN HIGH-PRESSURE HYDRAULIC  16
                                                                     LINE AND MAIN LOW-PRESSURE RETURN LINE.
                                                                     THE RETURN LINE WAS CHAFING AGAINST THE
                                                                     BODY OF THE VEHICLE AND QUICKLY
                                                                     WEARING, IT WAS BROUGHT INSIDE THE LOOP
                                                                     OF THE HIGH PRESSURE LINE. THIS WILL
                                                                     KEEP THE HOSE FROM FURTHER CONTACT WITH
                                                                     THE FRAME. EPR FB-16
11/08/77 1 077.7 007.0  S C C A C Y N 0000  0000  00.5  00.5 1  00.1 50 HOUR MAINTENANCE TO POWER UNIT ADD
                                                                     200 ML. BRAKE FLUID TO RESERVOIR. EPR
                                                                     FB-1030                                  1030
11/08/77 2 081.6 008.0  U O O A C Y N 0304  00.0  00.2  00.2 1  00.0 REPLACED DIRTY AIR INTAKE FILTER
PARTS P11-7437
                 GP=000010304 NO=01 LIFE=UNK   INTAKE FILTER
12/08/77 1 083.0 009.0  U F F A C Y Y 0708  00.0  03.0  03.0 1  02.3 REPLACE NEUTRAL SOLENOID ON CONTROL
CRITICALITY FACTOR= 1.00                                             VALVE ASSEMBLY TRANSMISSION SYSTEM
                                                                     FAILUREEPR FB-17                         17
PARTS 236402
                 GP=000010708 NO=01 LIFE=UNK   SOLENOID ON CONTROL VALVE.
12/08/77 1  83.4 009.1  U O O A C Y N 1100  00.0  00.5  00.5 1  00.2 ADJUSTED AXLE BREATHER CLAMP EPR FB-19   19
15/08/77 1 103.4 010.0  S C C A C Y N 0000  00.0  00.4  00.4 1  00.1 50 HOUR MAINTENANCE TO POWER UNIT FLUID
                                                                     LEVEL IN POWER CLUSTER RESERVOIR -OK
15/08/77 1 103.4 010.0A S C C A C Y N 0000  00.0  00.2  00.2 1  00.1 50 HOUR MAINTENANCE TO POWER SECTION
                                                                     CHECKED MIDMOUNT BEARINGS-OK EXCESSIVE
                                                                     LUBRICANT IN HOUSING EPR FB-24           24
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,935
 D         S OHR   A     T S E E T Q A C   G  CD     CH     MH    N OT                                          E
 A         H OON   C     A / C C M A M S   R  OL     LO     AO    E IT                                          P
 T         F OUD   T     S U H H '   T F   P  NY     OU     NU    N AM                                          R
 E         T MRS   N     K     R S            T      CR     R       GE                                          S
                                                     KS                      DESCRIPTION

 15/08/77 1 103.4 011.0  U C C A C N N 1103  00.0  00.5  00.5 1  00.1 CHECKED PLANETARY GEAR FLUID LEVEL
                                                                      FOUND LEVELS IN DUMPER SECTION-
                                                                      SATISFACTORY FOUND LEVELS IN POWER
                                                                      SECTION AS FOLLOWS= CURBSIDE FRONT 470
                                                                      MLS OVERFILLED ROADSIDE FRONT SLIGHTLY
                                                                      OVERFILLED WITH SOME AIR PRESSURE

 16/08/77 1 120.2 012.0  U O O A C Y Y 1201  00.0  00.2  00.2 1  00.1 ADJUSTED PARKING BRAKE BRAKE DID NOT     1051
                                                                      HOLD WHEN ON INCLINED SURFACE EPR
                                                                      FB-1051

 16/08/77 1 120.2  12.1  U O O A C Y N 1201          0.8   1.6 2        RE-ADJUSTED PARKING BRAKE WITH THE HELP 1051
                                                                      OF THE CLARK REP. EPR FB-1051

 16/08/77 2 120.2 013.0  U O O I C N N 2408  00.0  00.2  00.2 1  00.0 ADD 2 FLAT WASHERS - ONE TO EACH OF TWO  1052
                                                                      FUEL TANK MOUNTING BRACKETS. CLARK CO.
                                                                      OMITTED THEM IN THEIR ASSEMBLY OF THE
                                                                      POWER SECTION SN 446 X 108 EPR FB-1052

 17/08/77 1 136.4 014.0  U O O A C Y Y 0609  00.0  00.2  00.2 1  00.1 REPLACED CURBSIDE DRIVING LIGHT ON       27
                                                                      POWER UNIT. EPR FB-27 CSF=Y FOR
                                                                      ELECTRICAL SYSTEM CAUSES DEGRADATION OF
                                                                      DRIVERS ABILITY TO OPERATE IN NIGHT
                                                                      OPERATIONS AND IS A SAFETY PROBLEM. -
                                                                      NOTE ENTIRE HEADLIGHT WAS REPLACED.
                                                                      WILLCHANGE LAMP IN SHELL REMOVED FROM
                                                                      UNIT AND USE IT AS A SPARE.

 PARTS 0004880              GP=000010609 NO=01 LIFE=UNK    HEADLIGHT LAMP

 19/08/77 1 149.8 015.0  S C C A C Y N 0000  00.0  00.6  00.6 1  00.0 PERFORMED 50 HOUR SCHEDULED MAINTENANCE  1031
                                                                      OF POWER UNIT A. INSPECTED MASTER
                                                                      CYLINDEF RESERVOIR -LEVEL OK (.1 HOUR)
                                                                      B. INSPECTED/SERVICED MIDMOUNT BEARINGS
                                                                      -LEVEL OK (.2 HOUR) C. RECONNECT POWER
                                                                      UNIT TO DUMPER UNIT (.3 HOUR) EPR
                                                                      FB-1031

 19/08/77 1 149.8 015.0A U O O A C Y N 1410  00.0  00.2  00.2 1  00.0 TIGHTENED NUT ON GROUND STEERING PUMP     29
                                                                      ATTEMPTED TO TIGHT STUD TO WHICH IT WAS
                                                                      CONNECTED. EPR FB-29
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,935
 D         S OHR   A     T S E E T Q A C    G  CO      CH     MH     M OT                                        E
 A         H DON   C     A / C C M A M S    R  OL      LO     AO     E IT                                        P
 T         F OUD   T     S U H H '   T F    P  NY      OU     NU     N AM                                        R
 E         T MRS   N     K     R S              T      CR     R        GE                                        S
                                                       KS                        DESCRIPTION

 19/08/77 1 151.3 016.0  U 0 0 A C N N 0309  00.0  00.9  00.9 1  00.5 1. T935 EXPERIENCED POWER DEGRADATION     34
                                                                      2. CHECK AIR FILTERS + CLEANED THEM -
                                                                      NO CHANGE 3. CHECK FUEL FILTERS -
                                                                      COATED ; CHECKED STRAINER - SLUDGE AND
                                                                      WATER PRESENT IN FILTER HOUSING 4.
                                                                      CLEANED SCREEN AND PRIMARY FILTER
                                                                      HOUSING AND CHANGED CARTRIDGES IN THE
                                                                      SECONDARY FILTERS. EPR FB-34

 PARTS 2910-00-222-2216    GP=000010309 NO=02 LIFE=UNK   CARTRIDGE FUEL FILTERS.

 20/08/77 1 162.7 017.0  U F F A C Y Y 0501  00.0  07.1  12.8 3  00.5 1. AS A RESULT OF AN ACCIDENT, THE        35
                                                                      RADIATOR HAD TO BE REPLACED. A. SHIFT 1
                                                                      2.6 HRS WITH 3 MEN WORKING TO EXTRACT
                                                                      RADIATOR 3. SHIFT 2 4.5 HRS WITH 1 MAN
                                                                      WORKING TO INSTALL RADIATOR 2. SHIFT
                                                                      ONE HAD TO RECONNECT RUBBER CONNECTOR
                                                                      FROM TRANSMISSION FILL TUBE TO TUBE
                                                                      INTO TRANSMISSION HOUSING. EPR FB-35
CRITICALITY FACTOR= 1.00

 PARTS D278964             GP=000010501 NO=01 LIFE=UNK   RADIATOR/OIL COOLER

 23/08/77 1 179.3 018.0  U C C A C N N 0609  00.0  00.1  00.1 1  00.0 1. TIGHTENED ROADSIDE FLOODLIGHT          1053
                                                                      HOUSING INTO SUPPORT BRACKET 2. THE
                                                                      LIGHTS ON THE POWER SECTION ARE NOT
                                                                      COVERED IN THE MAC EPR FB-1053

 23/08/77 1 179.9 018.1  U 0 0 A C Y N 0000  00.0  00.5  00.5 1  00.5 STEAM CLEANED MOTOR/TRANSMISSION IN      37
                                                                      EFFORT TO LOCATE LEAKAGE EPR FB-37

 24/08/77 1 192.6 018.2  U 0 0 A C Y N 1410  00.2  00.0  00.2 1  00.0 TIGHTENED NUT ON GROUND STEERING PUMP.    42(29-1)
                                                                      ATTEMPTED TO TIGHTEN STUD TO WHICH IT
                                                                      WAS CONNECTED, EPR FB-42(29-1)

 24/08/77 1 192.7 019.0A U C C A C N N 0721  00.0  00.2  00.2 1  00.0 ADDED 2 3/4 QUARTS OF #10 HYDRAULIC OIL
                                                                      TO TRANSMISSION

 24/08/77 1 192.7 019.0B U 0 0 A C Y N 1208  00.0  00.1  00.1 1  00.0 REMOVED AND REINSTALLED AIR MANIFOLD      45.
                                                                      CONNECTING POWER UNIT AND DUMPER UNIT.
                                                                      EPR FB-45.
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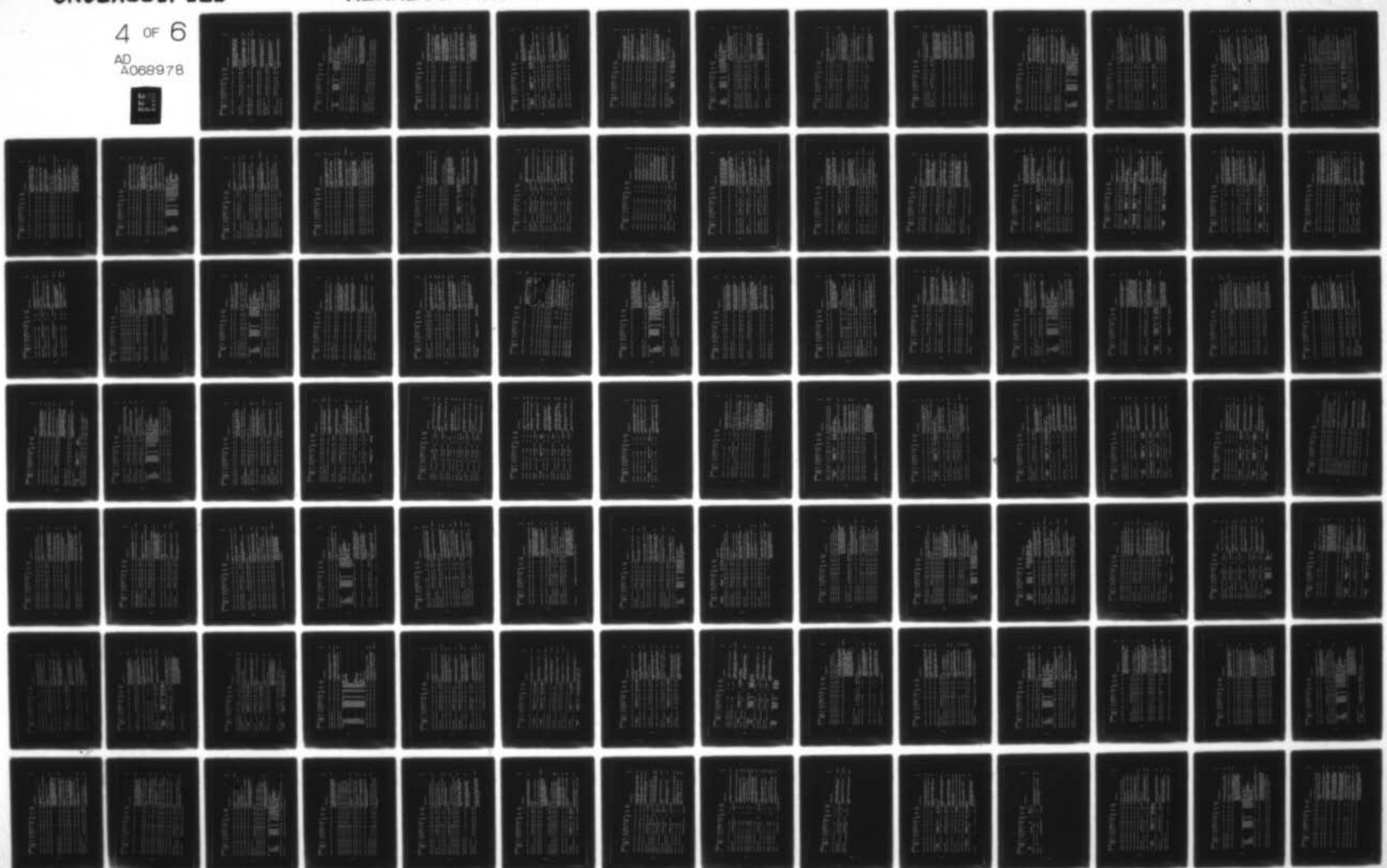
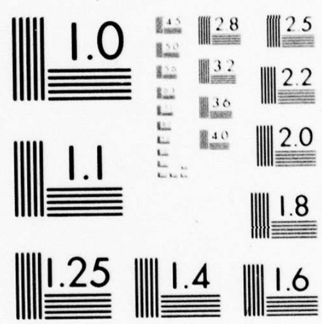
AD-A068 978 ARMY MOBILITY EQUIPMENT RESEARCH AND DEVELOPMENT COMM--ETC F/G 13/3
FAMILY OF MILITARY ENGINEER CONSTRUCTION EQUIPMENT (FAMECE) PRO--ETC(U)
MAR 79 A B FOLLANSBEE, R T EILER, C W HASLE

UNCLASSIFIED MERADCOM-2269 NL

4 OF 6

AD
A068978





MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,935
 D        S OHR   A      T S E E T Q A C   G  CD     CH     MH    M DT                                          E
 A        H DON   C      A / C C M A M S   R  OL     LO     AO    E IT                                          P
 T        F OUD   T      S U H H •   T F   P  NY     OU     NU    N AM                                          R
 E        T MRS   N      K     R S            T      CR     R      GE                                           S
                                                     KS                  DESCRIPTION
-----------------------------------------------------------------------------------------------------------------------

 24/08/77 2 198.9 020.0  U 0 0 A C Y N 1410  00.0  02.0  02.0 1  00.0 INSTALLED NEW GROUND DRIVE PUMP. PUMP     42
                                                                      REMOVED TO RETURN TO MANUFACTURER FOR
                                                                      ENGINEERING ANALYSIS BECAUSE OF FAILURE
                                                                      OF TWO STUDS HOLDING THE FLANGE TO THE
                                                                      PUMP BODY EPR FB-42

 PARTS 2501959          GP=000011410 NO=01 LIFE=137.9 PUMP, GROUND STEERING

 25/08/77 1 200.5 021.0  S C C A C Y N 0000  00.0  01.7  03.2 2  00.0 PULLED 50 HOUR MAINTENANCE A. CHECKED    1032
                                                                      MASTER CYLINDER RESERVOIRS - LEVEL OK
                                                                      B. CHECKED MIDMOUNT BEARING - LEVEL OK
                                                                      EPR FB-1032

 25/08/77 1 200.5  21.0A U C C I C Y Y 0000         1.5   4.5 3       HAD DIFFICULTY UNCOUPLING. EPR FB-1033   1033
CRITICALITY FACTOR= 1.00
-----------------------------------------------------------------------------------------------------------------------
 25/08/77 1 203.4 022.0  U 0 0 A C Y N 0105  00.0  03.0  03.0 1  00.5 1. REPLACED VALVE COVER GASKET AGAIN.    50(12-1)
                                                                      2. FOUND HOLE IN VALVE COVER; REPAIRED
                                                                      WITH EPOXY. SEEMED TO STOP LEAK. EPR
                                                                      FB-50(12-1)

 PARTS 5330-00-419-3205 GP=000010105 NO=01 LIFE=158.4 GASKET

 29/08/77 1 225.6 022.1  U 0 0 A C Y Y 1206  00.0  01.2  01.2 1  00.5 REPLACED PRESSURE SWITCH ON DECLUTCH      52
                                                                      BRAKE OLD UNIT DAMAGED DURING
                                                                      DISASSEMBLY OF TREADLE VALVE EPR FB-52
CRITICALITY FACTOR= 1.00
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 PARTS 5653727          GP=000011206 NO=01 LIFE=UNK   PRESSURE SWITCH

 29/08/77 1 237.2 023.0  U 0 0 A C Y N 1206  00.0  05.0  05.0 1  02.0 REPLACE TREADLE VALVE ON DECLUTCHING      52
                                                                      PEDAL; NO AIR PRESSURE, AIR LEAK.
                                                                      EGRESS OF VALVE 3.75 ENGRESS OF NEW
                                                                      VALVE 1.25 EPR FB-52

 PARTS 277472           GP=000011206 NO=01 LIFE=UNK   BRAKE TREADLE VALVE

 31/08/77 2 250.0 023.1  U 0 0 A C Y Y 2402  00.0  02.4  02.4 1  02.0 SOLDERED LUG ON WIRE AND CONNECTED TO     54
                                                                      SOLENOID ON ACCUMULATOR DUMP VALVE EPR
                                                                      FB-54
CRITICALITY FACTOR= 1.00
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,935
 D        S OHR    A     T S E E T Q A C   G  CD    CH    MH    M OT                                    E
 A        H DON    C     A / C C M A M S   R  OL    LO    AO    E IT                                    P
 T        F OUD    T     S U H H •   T F   P  NY    OU    NU    N AM                                    R
 E        T HRS    N     K     R S             T    CR    R       GE                                    S
                                                     KS                 DESCRIPTION

 01/03/77 1 253.3 024.0  S O O A C Y N 0000  00.0  03.9  03.9 1  00.0 250 HR MAINTENANCE; ALL BREATHERS WERE   1034
                                                                      CLEANED BUT NOT REPLACED AS NONE WERE
                                                                      AVAILABLE. EPR FB-1034

 PARTS MS-35802-3          GP=000010106 NO=02 LIFE=        FILTER ELEMENT, OIL, FULL FLOW
       9311                   000010106    02              FILTER ELEMENT, OIL, BYPASS
       5678                   000010309    02       101.7  CARTRIDGE, FUEL FILTER
       LF-511                 000010721    01              FILTER ELEMENT, OIL, TRANSMISSION
       299080                 000010508    01              FILTER ELEMENT, WATER, CORROSION RESIST
       AC43887                000011202    01              FILTER ELEMENT, FL, POWER CLUSTER

 02/03/77 2 268.8 025.0  U C C A C N N 0000  00.0  00.2  00.3 2  00.0 ADDED 5 QUARTS OF ENGINE OIL

 03/03/77 1 269.2 026.0  U C C A C N N 0000  00.0  00.3  00.3 1  00.1 1. ADDED 2 QUARTS ENGINE OIL 2. ADDED 2
                                                                      QUARTS TRANSMISSION OIL

 03/03/77 1 273.6 027.0  U C C A C N N 0000  00.0  00.2  00.2 1  00.1 1. ADDED 2 QUARTS OF ENGINE OIL 2.
                                                                      ADDED 2 QUARTS OF TRANSMISSION OIL

 06/03/77 1 280.1 027.1  U O O I C Y Y 1208  00.0  01.5  01.5 1  00.1 CHARGE UP AIR SYSTEM EPR FB-73(15-2)      73(15-2)
CRITICALITY FACTOR= 1.00

 06/03/77 1 280.5 027.2  U C C A C Y N 0609  00.0  00.1  00.1 1  00.0 REPLACED BULB IN COMPOSIT FRONT LIGHT     71
                                                                      EPR FB-71

 06/03/77 1 280.5 028.0  U O O A C Y Y 1201  00.0  00.5  00.5 1  00.2 1. JAM NUT FELL OFF OF PARKING BRAKE       70(7-1)
                                                                      AGAIN. REPLACED NUT AND READJUSTED THE
                                                                      PARKING BRAKES ALSO HOOKED UP GLAD
                                                                      HANDS TO ANOTHER POWER UNIT AND CHARGED
                                                                      SYSTEM EPR FB-70(7-1)
CRITICALITY FACTOR= 1.00

 PARTS UNKNOWN             GP=000011201 NO=02 LIFE=242.4 NUT, RETAINING

 06/03/77 1 281.1 029.0  U C C A C N N 0000  00.0  00.4  00.4 1  00.1 ADDED 1 GALLON TRANSMISSION OIL

 06/03/77 1 283.9 030.0  U C C A C N N 0000  00.0  00.2  00.2 1  00.1 ADDED 1 GALLON TRANSMISSION OIL

 07/03/77 1 293.5 031.0  U C C A C N N 0000  00.0  00.5  00.5 1  00.1 ADDED 2 GALLONS TRANSMISSION OIL
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03/05/79
MAINTENANCE TASK LOG_  TEST_,FAMECE1 TEST ITEM ,935
 D       S OHR   A      T S E E T Q A C   G  CO     CH     MH     M OT                                       E
 A       H DON   C      A / C C M A M S   R  OL     LO     AO     E IT                                       P
 T       F OUD   T      S U H H '   T F   P  NY     OU     NU     N AM                                       R
 E       T MRS   N      K     R S            T      CR     R        GE                                       S
                                                    KS                   DESCRIPTION

07/09/77 2 296.6 032.0  U C C A C Y N 0721  00.0   00.1   00.1 1  00.0 REINSERTED TRANSMISSION FILLER TUBE IN   74
                                                                       HOSE CONNECTION AND TIGHTED HOSE CLAMP
                                                                       EPR FB-74

07/09/77 1 296.6 032.0A U C C A C N N 0000  00.0   00.3   00.3 1  00.1 ADDED 2 GALLONS OF TRANSMISSION OIL

07/09/77 2 296.6 032.0B U O O I C Y Y 1201  00.0   00.3   00.3 1  00.1 JAM NUT LOOSE ON PARKING BRAKE           75(7-2)
                                                                       ASSEMBLY, NUT TIGHTENED PARKING BRAKE
                                                                       ADJUSTED. NO PART NUMBER FOR JAM NUT
                                                                       LISTED IN ORG. MAINT MANUAL ON POWER
                                                                       SECTION. EPR FB-75(7-2)

08/09/77 1 302.9 033.0  S C C A C Y N 0000  00.0   00.6   00.6 1  00.1 50 HOUR MAINTENANCE PERFORMED A. CHECK   1035
                                                                       MASTER CYLINDER RESEVOIR-ADDED 150-200
                                                                       MLS OF FLUID B. CHECKED MIDMOUNT
                                                                       BEARING- C. ADDED 2 GALLONS OF
                                                                       HYDRAULIC SYSTEM OIL D. PERFORMED 10
                                                                       HOUR LUBE ALSO EPR FB-1035

08/09/77 2 311.5 034.0  S C C A C N N 0000  00.0   00.2   00.2 1  00.0 ADDED 1.5 GALLONS OF TRANSMISSION OIL

09/09/77 1 311.6 035.0  U C C A C N N 0000  00.0   00.3   00.3 1  00.1 ADDED ONE QUART ENGINE OIL

09/09/77 1 311.6 035.0A U O O A C Y Y 1414  00.0   00.2   00.2 1  00.1 TIGHTEN NUT ON ROTARY MAINFOLD TO STOP   106
                                                                       A SEEPAGE IN THE CAB OF THE VEHICLE EPR
                                                                       FB-106

10/09/77 1 325.5 036.0  U F F I C Y Y 0710  00.0   04.5   4.5 1   00.5 1. REPLACED FRONT OUTPUT SHAFT SEAL      108
                                                                       BECAUSE OF LEAKAGE 2. THIS ITEM IS NOT
                                                                       IN THE MAC 3. THIS ACTION IS NOT IN THE
                                                                       MANUAL EPR FB-108
CRITICALITY FACTOR= 1.00

 PARTS MP# SK-35895      GP=000010710 NO=01 LIFE=UNK   SEAL (FRONT OUTPUT SHAFT OF TRANSMISSION)

12/09/77 1 333.4 037.0  U C C I C Y Y 1208  00.0   01.3   01.3 1  00.2 1. CONNECTED GLAD HANDS TO AIR SYSTEM    122(73-1)
                                                                       OF ANOTHER FAMECE IN ORDER TO CHARGE UP
                                                                       THE AIR SYSTEM IN THE DUMPER. THIS
                                                                       PROCEDURE WORKED ONCE BEFORE WHEN WE
                                                                       LOST AND COULD NOT BUILD AIR PRESSURE
                                                                       IN THE DUMPER EPR FB-122(73-1)
CRITICALITY FACTOR= 1.00
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,935
 D          S OHR   A     T S E E T Q A C   G  CD     CH     MH     M DT                                      E
 A          H OON   C     A / C C M A M S   R  OL     LO     AO     E IT                                      P
 T          F OUD   T     S U H H '   T F   P  NY     OU     NU     N AM                                      R
 E          T MRS   N     K     R S            T      CR     R        GE                                      S
                                                      KS                      DESCRIPTION

 13/09/77 1 343.8 038.0  S C C A C Y Y G000  00.0  03.2  03.2 1  00.2 50 LUB. (SPEND TWO HOURS COUPLING +     129
                                                                     UNCOUPLING) 10 HR LUBRICATION 2 QTS
                                                                     ENGINE OIL ADDED 6 ML OIL TC FRONT MOMT
                                                                     BEARING EPR FB-129
CRITICALITY FACTOR= 1.00

 PARTS 569022-03          GP=000010900 NO=01 LIFE=        VENT ASSY, BREATHER, MOMT
       569022-03             000011100   01               VENT ASSY, BREATHER, AXLE
       569020-03             000010700   01               VENT ASSY, BREATHER, TRANSMISSION

 14/09/77 2 357.1 039.0  S C C A M N N 0000  00.0  00.3  00.3 1  00.1 ADDED 2 GALLONS HYDRAULIC FLUID TO THE
                                                                     TANK

 14/09/77 1 357.1 039.1  U C C A C Y N 0609  00.0  00.1  00.1 1  00.0 REPLACED BULB IN ROADSIDE CLEARANCE     135
                                                                     LIGHT (AMBER) EPR FB-135

 PARTS MS15570-1251       GP=000010609 NO=01 LIFE=  UNK BULB, INCANDESCENT

 14/09/77 2 359.6 040.0  U O O A M Y Y 0609  00.0  00.2  00.2 1  00.0 REPLACED BURNED OUT LEFT HEADLIGHT EPR  134
                                                                     FB-134

 PARTS 1030286            GP=000010609 NO=01 LIFE=UNK    LAMP

 14/09/77 2 359.6 040.0A S C C A   N N 0000  00.0  00.2  00.2 1  00.0 ADDED 2 GALLONS OF HYDRAULIC OIL

 15/09/77 1 362.8 040.1  U O O I C Y Y 1201  00.0  01.8  03.0 2  00.5 REPLACED PARKING BRAKE CABLE OLD CABLE  138
                                                                     WAS DAMAGED ADJUSTED PARKING BRAKE EPR
                                                                     FB-138

 PARTS 2546146            GP=000011201 NO=01 LIFE=UNK    CABLE, REMOTE ACTUATOR

 16/09/77 2 377.8 041.0  U O O A   Y Y 2408  00.0  00.2  00.2 1  00.0 REMOVED FILLER NECK ASSY AND PACKING -   142
                                                                     CLEAN AND RE-INSTALL, POSSIBLE CAUSE OF
                                                                     LEAK WAS PACKING. EPR FB-142

 17/09/77 2 397.4 042.0  S C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GALLON OF OIL TO THE
                                                                     TRANSMISSION

 19/09/77 1 409.9 043.0  S C C A M Y N 0000  00.0  00.2  00.2    00.0 50 HOUR MAINTENANCE. EPR FB-1036         1036
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,935
 D         S OHR    A     T S E E T Q A C    G  CD     CH    MH    M DT                                      E
 A         H DON    C     A / C C M A M S    R  OL     LO    AO    E IT                                      P
 T         F OUD    T     S U H H '   T F    P  NY     OU    NU    N AM                                      R
 E         T HRS    N     K     R S             T      CR    R       GE                                      S
                                                       KS                    DESCRIPTION
----------------------------------------------------------------------------------------------------------------

 19/09/77 1 409.9 043.0A U O O I M Y N 0000  00.0  00.3  00.3 1  00.0 CURBSIDE DOLLY WHEEL UPPER SUPPORT      176
                                                                      BRACKET BROKE. INSTALLED NUT AND BOLT
                                                                      TO SECURE DOLLY WHEEL. EPR FB-176
----------------------------------------------------------------------------------------------------------------
 20/09/77 2 416.9 044.0  U O O A C Y Y 0601  00.0  01.0  02.0 2  00.0 ADJUST AND TIGHTEN ALTERNATOR BELTS THE  178
                                                                      BELTS WERE LOOSE EPR FB-178

 21/09/77 1 419.2 045.0  U O F I M Y Y 0312  00.0  08.3  12.3 2  00.5 REATTACHED THROTTLE LINKAGE; IT HAD      179
                                                                      VIBRATED APART. NO PARTS REFLACED. EPR
                                                                      FB-179
CRITICALITY FACTOR= 1.00

 22/09/77 2 437.6 046.0  S C C A   N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GALLON OF OIL TO THE
                                                                      TRANSMISSION

 24/09/77 1 452.5 047.0  S C C A   Y N 0000  00.0  00.8  00.8 1  00.1 PERFORMED 50 HOUR LUBRICATION A. ADDED  1037
                                                                      2 OZ BRAKE FLUID TO THE POWER CLUSTER
                                                                      RESERVOIR B. ADDED 12 ML OIL TO MASTER
                                                                      CYLINDER EPR FB-1037

 27/09/77 1 480.7 048.0  U C C A   Y N 0306  00.0  00.2  00.2 1  00.1 REPLACED BOLT-ONE ON FUEL TANK MOUNTING  206
                                                                      BRACKET, EPR FB-206

 27/09/77 1 480.7 048.0A S C C A   Y N 0501  00.0  00.2  00.2 1  00.1 REPLACED SURGE TANK MOUNTING BOLT. EPR   210
                                                                      FB-210

 PARTS P/N 17C-616H         GP=000010501 NO=01 LIFE=UNK    SCREW, CAP HEXHEAD, PHOS CTE, 3/8-16 UNC, 1 IN. LE.

 27/09/72 2 482.7 049.0  U C C A M Y N 2402  00.0  00.1  00.1 1  00.0 BEND BRACKET DTT PROP. DISC. - BRACKET   213
                                                                      BENT- COULD NOT SHIFT THE PROP DISC ROD
                                                                      ASSY - THE BRACKET WAS RE-BENT BACK IN
                                                                      POSITION EPR FB-213

 27/09/77 2 482.7 049.0A S C C A   N N 0000  00.0  00.3  00.3 1  00.0 ADDED 4 QUARTS OF OIL TO THE
                                                                      TRANSMISSION ADDED 2 GALLONS OF
                                                                      HYDRAULIC OIL

 28/09/77 1 496.3 050.0  U C C A   N N 0000  00.0  00.2  00.2 1  00.1 ADDED 1 GALLON TRANSMISSION OIL

 28/09/77 2 500.7 051.0  S O O A   Y N 0000  00.0  04.5  09.0 2  00.0 500 HOUR MAINTENANCE EPR FB-1038        1038
 PARTS P11-7434             GP=000010304 NO=01 LIFE=179.1 FILTER, AIR
       MS-35802-3              000010106    02      247.4 FILTER ELEMENT, OIL, FULL FLOW
       9311                    000010106    02      247.4 FILTER ELEMENT, OIL, BYPASS
       5678                    000010309    02      247.4 CARTRIDGE, FUEL FILTER
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,935
 D          S OHR   A    T S E E T Q A C   G  CD     CH      MH     M DT                                                    E
 A          H DON   C    A / C C M A M S   R  OL     LO      AO     E IT                                                    P
 T          F OUD   T    S U H H '   T F   P  NY     OU      NU     N AM                                                    R
 E          T MRS   N    K     R S            T      CR      R        GE                                                    S
                                                     KS                         DESCRIPTION

      LF-511                    000010721    01      247.4 FILTER ELEMENT, OIL, TRANSMISSION
      299040                    000010508    01      247.4 FILTER ELEMENT, WATER, CORROSION RESIST
      AC43887                   000011202    01      247.4 FILTER ELEMENT, FL, POWER CLUSTER
      569022-03                 000010900    01      156.9 VENT ASSY, BREATHER, MDMT
      569022-03                 000011100    01      156.9 VENT ASSY, BREATHER, AXLE
      569020-03                 000010700    01      156.9 VENT ASSY, BREATHER, TRANSMISSION

28/09/77 2 500.7 051.0A S O O A M Y N 0000  0000    1.8    3.6 2         PERFORMED 500 HOUR MAINTENANCE A. DRAIN   1038
                                                                       AND REFILL PLANETARIES B. DRAIN AND
                                                                       REFILL DIFFERENTIALS C. DRAIN AND
                                                                       REFILL TRANSMISSION. EPR FB-1038

28/09/77 2 500.7 051.0B U O O A M Y N 1201  0000  01.5  03.0 2  00.1 ADJUSTED PARKING BRAKES. EPR FB-222         222

28/09/77 1 500.7 051.0C U O O A M Y N 0609  0000  00.1  00.1 1  00.1 REPLACED BURNED OUT LAMP. EPR FB-189        189

PARTS 6240-00-019-077      GP=000010609 NO=01 LIFE=087.5 LAMP, INCANDESCENT

29/09/77 1 500.7 051.0D U O O A M Y Y 1208  00.0  00.9  00.9 1  00.0 REPLACED AIR TANK DRAIN VALVES. EPR        223
                                                                       FB-223

PARTS NSN4820-00-420-6194 GP=000011208 NO=02 LIFE=UNK   VALVE, DRAIN (AIR BRAKE SYSTEM)

04/10/77 2 549.0 052.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 2 QUARTS OF OIL TO TRANSMISSION

06/10/77 2 565.6 053.0  U C C A M Y N 1507  00.0  00.2  00.2 1  00.0 INSTALLED A NEW LUBRICATION FITTING         237
                                                                       BECAUSE THE OILD FITTING WAS DAMAGED.
                                                                       EPR FB-237

PARTS 10H25                GP=000011507 NO=01 LIFE=UNK   FITTING, LUBRICATION

06/10/77 2 565.6 053.0A U O O I C N N 2407  00.0  00.5  00.5 1  00.0 INSTALL 1 VALVE AT EACH OF 2 DOLLY           240
                                                                       WHEEL CYLINDERS, IN SERIES WITH HOSE
                                                                       ASSY 29,242R6-JSN8- J9058. THIS IS TO
                                                                       ELIMINATE THE DOLLY WHEEL CREEP
                                                                       EXPERIENCED BY ALL POWER SECTIONS EPR
                                                                       FB-240

PARTS UNKNOWN              GP=000012407 NO=02 LIFE=UNK   VALVE, SHUT OFF

06/10/77 2 571.6 054.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 QUART OF ENGINE OIL
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,935
 D        S OHR   A    T S E E T Q A C   G  CD     CH     MH     M DT                                   E
 A        H OUN   C    # / C C H A M S   R  OL     LO     AO     E IT                                   P
 T        F OUD   T    S U H H '   T F   P  NY     OU     NU     N AM                                   R
 E        T HRS   N    K     R S            T      CR     R       GE                                    S
                                                   KS                        DESCRIPTION

06/10/77 2 571.5 054.0A U C C A M Y N 0609  00.0  00.2  00.2 1  00.0 REPLACED BURNED OUT LAMP IN RIGHT TAIL    235
                                                                     LIGHT EPR FB-235

PARTS 15570-623          GP=000010609 NO=01 LIFE=UNK   LAMP, INCANDESCENT

08/10/77 2 590.2 055.0  S C C A M N N 0000  00.0  00.5  00.5 1  00.0 ADD 2 GALLONS OF COOLANT TO FILL
                                                                     RADIATOR

12/10/77 1 601.1 055.1  S C C A M Y N 0000  00.0   0.3   0.3 1       50 HR MAINTENANCE. EPR FB-1039        1039

12/10/77 1 601.1  55.2  U O O I M Y Y 0000          0.8   2.4 3       DIFFICULTY UNCOUPLING. EPR FB-1039     1039

13/10/77 1 621.6 056.0  U O C I M N N 2201  00.0  00.2  00.4 2  00.0 INSTALLED CANVAS CAB ASSEMBLY. (TMOEPS-
                                                                     -201-20*P INADEQUATE- TM STATES THE
                                                                     PERTINENT CANVAS CAB ILLUSTRATIONS FIG
                                                                     2-170, PAGE 2-80C + FIG. 132, PAGE
                                                                     C-172 SHALL BE SUPPLIED LATER.)

PARTS 2546395            GP=000012201 NO=01 LIFE=0000  CAB ENCLOSURE-SOFT

14/10/77 2 641.8 057.0  S C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADD 1 GALLON OF HYDRAULIC OIL

15/10/77 1 642.0 058.0  U C C A M N N 0306  00.0  00.1  00.1 1  00.0 TIGHTENED BOLT FOR SECURING FUEL TANK    1040
                                                                     AGAINST THE FRAME. EPR FB-1040

15/10/77 1 649.0 058.1  U C C A M N N 2408  00.0  00.1  00.1 1  00.0 DURING POST OPERATIONAL CHECK OF
                                                                     VEHICLE, CREW ADDED 4QTS OF HYDRAULIC
                                                                     FLUID.

17/10/77 1 653.4 058.2  U O O A M Y Y 0609  00.0  00.3  00.3 1  00.0 REPLACE LEFT FLOOD LIGHT ON ROPS EPR      252
                                                                     FB-252

PARTS 4880               GP=000010609 NO=01 LIFE=      LAMP, FLOODLIGHT

17/10/77 1 653.4 058.3  S C C A M Y N 0000  00.0   2.0   3.0 2       PERFORMED 50 HR MAINTENANCE PER LUBE    1041
                                                                     ORDER L05-3840-201-12. DURING 50 HOUR
                                                                     MAINTENANCE, 10 SQUIRTS OF GE/HO/ WAS
                                                                     ADDED TO THE MIDMOUNT BEARING. EPR
                                                                     FB-1041
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,935
 D          S OHR    A     I S E E T Q A C    G  CD    CH     MH    M DT                                              E
 A          H DON    C     A / C C M A M S    R  OL    LO     AO    E IT                                              P
 T          F OUD    T     S U H M *   T F    P  NY    OU     NU    N AM                                              R
 E          T MRS    N     K     R S             T     CR      R      GE                                              S
                                                       KS                     DESCRIPTION

 17/10/77 1 655.9 058.4  S O O A M Y N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GAL. OF TRANSMISSION FLUID.

 17/10/77 2 656.4 059.0  U O O A M Y Y 0609  00.0  00.2  00.2 1  00.0 REPLACE BURNED OUT LAMP IN SERVICE        249
                                                                      HEADLIGHT,EPR FB-249
CRITICALITY FACTOR= 0.25

 PARTS 4480                GF=000010609 NO=01 LIFE=       LAMP, HEADLIGHT

 18/10/77 1 664.0 060.0  U O O I C Y Y 1501  00.0  00.2  00.2 1  00.1 REWELDED FRAME BRACKET FOR MOUNTING       256
                                                                      FUEL TANK. BRACKET, LOCATED IN
                                                                      PROXIMITY RADIATOR AIR INLET, SEPARATED
                                                                      BETWEEN THE FRAME AND THE POSITION
                                                                      WHERE IT IS BOLTED TO THE FUEL TANK.
                                                                      BRACKET IS NOT SHOWN IN THE TM (DEP 5-
                                                                      -201-34 + P) EPR FB-256

 20/10/77 1 685.1 061.0  U O O A M Y N 1313  00.0  00.8  00.8 1  00.0 INFLATED RIGHT FRONT TIRE TO 55 PSI.
                                                                      TIRE PRESSURE WAS LOW AT 50 PSI.
                                                                      INFLATED BOTH DOLLY WHEELS TO 90 PSI.
                                                                      TIRE PRESSURES WERE LOW AT 60 PSI.

 21/10/77 1 690.3 062.0  S C C A M N N 0501  00.0  00.2  00.2 1  00.0 TIGHTENED BOLTS USED TO MOUNT THE SURGE   258
                                                                      TANK TO THE BRACKET ASSEMBLY. EPR
                                                                      FB-258

 21/10/77 1 690.3 062.0A S C C A M N N 1802  00.0  00.1  00.1 1  00.0 DURING PRE-OPERATIONAL CHECK, OPERATOR    259
                                                                      TIGHTENED BOLTS ON THE ENGINE ACCESS
                                                                      PANEL, LOCATEDIIN THE RIGHT FRONT WHEEL
                                                                      WELL, EPR FB-259

 21/10/77 1 690.3 062.0B U O O A M Y Y 0505  00.0  02.5  02.5 1  01.0 TIGHTENED MOUNTING AND ADJUSTING BOLTS    260
                                                                      ON FAN PULLEY AND HUB ASSEMBLY. EPR
                                                                      FB-260
CRITICALITY FACTOR= 1.00

 21/10/77 1 693.0 063.0  U O O A C N N 0505  00.0  00.5  00.5 1  00.0 FAN WHEEL IS HITTING FAN RING OR          261
                                                                      SHROUD. MECHANIC RETIGHTENED ADJUSTING
                                                                      BOLTS ON FAN HUB ASSEMBLY. EPR FB-261

 22/10/77 1 699.6 064.0  S C C A M N N 2408  00.0  00.2  00.2 1  00.0 DURING PREOPERATIONAL CHECK, THE BOLTS,   262
                                                                      FOR SECURING THE HYDRAULIC TANK TO THE
                                                                      FRAME, WERE TIGHTENED. EPR FB-262
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,935
 D          S OHR   A     T S E E T Q A C   G  CO      CH     MH    M DT                                        E
 A          H DON   C     A / C C M A M S   R  OL      LC     AO    E IT                                        P
 T          F OUD   T     S U H H '  T F    P  NY      OU     NU    N AM                                        R
 E          T HRS   N     K    R S             T       CR      R      GE                                        S
                                                       KS                     DESCRIPTION
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22/10/77 1 699.6 064.0A  U O O A M N N 0000  00.0  00.1  00.1 1  00.0 DURING PRE-OPERATIONAL, 1 GAL OF
                                                                      HYDRAULIC FLUID WAS ADDED TO THE HYD.
                                                                      TANK.

22/10/77 1 702.5 065.0   S C C A M Y N 0000  00.0   0.4   1.0 3       PERFORMED 50 HOUR MAINTENANCE PER LUBE   1042
                                                                      ORDER L05-3840-201-12. EPR FB-1042

22/10/77 1 702.5  65.1   U O O I M Y Y 0000         1.1   2.8 3       DIFFICULTY UNCOUPLING (3 MEN X 50 MIN).  1042
                                                                      RESET CYLINDER PRESSURE TO 2500 PSI (1
                                                                      MAN X 15 MIN). EPR FB-1042

25/10/77 1 717.1 066.0   U C C A M N N 0000  00.0  00.1  00.1 1  00.0 DURING POST OPERATIONAL CHECK OF
                                                                      VEHICLE, CREW ADDED 2 QTS OF ENGINE
                                                                      OIL.

26/10/77 2 731.1 067.0   U C C A M Y N 0609  00.0  00.2  00.2 1  00.0 REPLACE BURNED OUT LAMP.  EPR FB-264        264

PARTS 4578                   GP=000010609 NO=01 LIFE=UNK    LAMP

27/10/77 2 737.7 068.0   U O O A C N N 1501  0000  00.5  00.5 1  00.0 WELDED MODIFICATION BRACKET TO FRAME TO  268
                                                                      SUPPORT THE TOP OF THE FUEL TANK EPR
                                                                      FB-268

28/10/77 2 739.3 069.0   U F F A C Y Y 1501  00.0  01.6  03.2 2  00.0 WELD BROKEN TOP + BOTTOM HYDRAULIC        269
                                                                      MOUNTING BRACKETS EPR FB-269
CRITICALITY FACTOR= 1.00

31/10/77 1 753.3 070.0   S O O A M Y N 0000  00.0  05.0  07.7 2  00.0 250 HR MAINTENANCE 32 QTS OF OE30         1044
                                                                      ENGINE OIL DIFFERENTIAL AND PLANETARIES
                                                                      DRAINED AND REFILLED, LUBRICANT
                                                                      CONTAMINATED WITH WATER. EPR FB-1044

PARTS MS-35802-3             GP=000010106 NO=02 LIFE=252.6 FILTER ELEMENT, OIL, FULL FLOW
      9311                      000010106    02      252.6 FILTER ELEMENT, OIL, BYPASS
      5678                      000010309    02      252.6 CARTRIDGE, FUEL FILTER
      35070                     000010309    01            CARTRIDGE, FUEL FILTER
      LF-511                    000010721    01      252.6 FILTER ELEMENT, OIL, TRANSMISSION
      299080                    000010508    01      252.6 FILTER ELEMENT, WATER, CORROSION RESIST
      AC43887                   000011202    01      252.6 FILTER ELEMENT, FL, POWER CLUSTER
      569022-03                 000010900    01      252.6 VENT ASSY, BREATHER, MDMT
      569022-03                 000011100    01      252.6 VENT ASSY, BREATHER, AXLE
      569020-03                 000010700    01      252.6 VENT ASSY, BREATHER, TRANSMISSION
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,935
D        S OHR   A     T S E E T Q A C   G  CO     CH     MH     M OT                                             E
A        H DOH   C     A / C C M A M S   R  OL     LO     AO     E IT                                             P
T        F OUD   T     S U H H '   T F   P  NY     CU     NU     N AM                                             R
E        T MRS   N     K     R S            T      CR     R        GE                                             S
                                                   KS                     DESCRIPTION

31/10/77 1 753.3 070.0A U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 1 GALLON TRANSMISSION/OIL

31/10/77 2 755.5 071.0  U O O A M Y Y 0501  00.0  00.5  00.5 1  00.0 TIGHTEN 2 RADIATOR MOUNTING SCREWS THAT  271
                                                                     WERE LOOSE - CHECKED FOR MORE LOOSE
                                                                     SCREWS BUT FOUND NONE EPR FB-271

31/10/77 2 761.8 072.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADD 2 QUARTS OF ENGINE OIL

01/11/77 2 764.6 073.0  U C C A M N N 0000  00.0  00.3  00.3 1  00.0 ADD 1 1/2 GALS OF COOLANT TO THE
                                                                     RADIATOR

01/11/72 2 764.6 073.0A U C C A M Y N 0721  00.0  00.1  00.1 1  00.0 REPLACE DEFECTIVE DIPSTICK EPR           265(S-1)
                                                                     FB-265(S-1)

PARTS 2548348           GP=000010721 NO=01 LIFE=UNK   DIPSTICK

01/11/77 2 764.6 073.0B U O O A M Y Y 0607        00.5  00.8 2  00.2 REPLACE OIL PRESSURE GAGE EPR FB-272     272

PARTS 6464978           GP=000010607 NO=01 LIFE=UNK   GAGE, OIL PRESSURE

02/11/77 1 770.3 074.0  U C C A M N N 0000  00.0  00.3  00.3 1  00.0 1. ADDED I GALLONS OE-10 TO HYDRAULIC
                                                                     TANK 2. ADDED U GALLON ANTIFREEZE MIX
                                                                     TO COOLING SYSTEM

02/11/77 1 770.3 074.0A U O O A M Y N 0505  00.0  00.5  00.5 1  00.0 REPLACED CAPSCREW IN ADJUSTING CLAMP ON
                                                                     FAN HUB SHAFT. CAP SCREW + WASHER
                                                                     MISSING. DEPS-201-OJ +P PG8-110 FIG. 45
                                                                     ITEM 7+8

PARTS 554316            GP=000010505 NO=01 LIFF=UNK   CAPSCREW
      153411               000010505    01      UNK   WASHER

03/11/77 2 787.0 075.0  U O O A M Y N 2020  0.00  0.40  0.41 0  0.0  INSTALLED AS A TEMP. FIX, A PETCOCK      277
                                                                     VALVE TO BY PASS A BAD VALVE IN THE
                                                                     WINDSHIELD WIPER ASY EPR FB-277

04/11/77 2 798.8 076.0  U O O A M Y Y 1201  00.0  00.5  00.5 1  00.0 ADJUST PARKING BRAKE, BRAKE WAS OUT OF   276
                                                                     ADJUSTMENT. TOO LOOSE EPR FB-276

04/11/77 2 804.6 077.0  U C C A M Y N 1806  00.0  00.1  00.1 1  00.0 TIGHTEN KNOB MOUNTING SCREW ON AIR       278
                                                                     CONTROL ASSY EPR FB-278
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,935
 D        S OHR   A     T S E E T Q A C   G  CD    CH     MH    M OT                                          E
 A        H DON   C     A / C C M A M S   R  OL    LO     AO    E IT                                          P
 T        F OUD   T     S U H H '   T F   P  NY    OU     NU    N AM                                          R
 E        T MRS   N     K     R S            T     CR     R       GE                                          S
                                                   KS                      DESCRIPTION

 05/11/77 1 805.1 078.0  S C C A M Y N 0000  00.0   1.2   2.0 2        PERFORMED 50 HR MAINTENANCE PER LUBE     1043
                                                                      ORDER L05-3840-201-12 EPR FB-1043

 07/11/77 2 821.6 079.0  U O O A C Y N 1501  00.0  00.2  00.2 1  00.0 WELD CRACKED ROADSIDE FUEL TANK           1054
                                                                      MOUNTING BRACKET EPR FB-1054

 07/11/77 2 821.6 079.0A U O O A M Y N 1501  00.0  00.4  00.4 1  00.0 REPLACED CURBSIDE DOLLY CYLINDER          176(S-1)
                                                                      MOUNTING BRACKET ASSY. EPR FB-176(S-1)

 PARTS 2546346              GP=000011501 NO=01 LIFF=       UPPER SUPPORT BRACKET, DOLLY CYLINDER
       2503282                 000011501    01             LOCK PLATE
       2549322                 000011501    01             BUSHING, SELF ALIGN.
       2503283                 000011501    01             PIN

 07/11/77 2 821.6 079.1  U O O A M Y Y 1203  00.0  00.2  00.4 2  00.0 ADJUST SERVICE BRAKES ON PS-THE PS        345
                                                                      BRAKES WERE OUT OF ADJUSTMENT EPR
                                                                      FB-345
CRITICALITY FACTOR= 1.00

 08/11/77 1 822.8 079.1A U O O A M Y N 1203  00.0  01.2  01.7 2  00.0 ADJUSTED SERVICE BRAKES EPR FB-345        345

 09/11/77 2 829.9 079.2  U F F A M Y N 1203  00.0  00.3  00.6 2  00.0 ADJUST POWER SECTION SERVICE BRAKES.      346
                                                                      EPR FB-346

 10/11/77 1 833.9 080.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.1 ADDED 2 QUARTS OE-30 TO ENGINE.

 10/11/77 1 837.9 080.1  U O O A M Y Y 0607  00.0  00.2  00.2 1  00.2 REPLACED HOUR METER EPR FB-726           726

 PARTS 2549166              GP=000010607 NO=01 LIFE= UNK   HOURMETER (INSTRUMENT PANEL)

 11/11/77 1 845.0 081.0  U O O A M Y N 0607  00.0  00.2  00.2 1  00.0 REINSTALLED ORIGINAL HOUR METER PART     726
                                                                      NO. 2549166 EPR FB-726

 11/11/77 1 850.5 081.1  U C C A M Y N 1100  00.0  00.1  00.1 1  00.0 CHECKED LUBRICANT LEVEL IN PLANETARY      347
                                                                      AND TIGHTENED DRAIN PLUG, LEFT FRONT
                                                                      WHEEL.EPR FB-347

 11/11/77 2 856.7 082.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GAL OF TRANSMISSION FLUID TO
                                                                      THE DUMPER POWER SECTION DURING POST
                                                                      OPERATION INSPECTION
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,935
D          S OHR   A     T S E E T Q A C   G  CO     CH     MH     M DT                                           E
A          H DON   C     A / C C M A M S   R  OL     LO     AO     E IT                                           P
T          F OUC   T     S U H H '   T F   P  NY     OU     NU     N AM                                           R
E          T MRS   N     K     R S             T     CR     R        GE                                           S
                                                     KS                   DESCRIPTION

12/11/77 1 857.0 083.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 11/2 GALLON OE-10 TO HYDRAULIC
                                                                     TANK

12/11/77 1 857.0 083.0A U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 1 GALLON TRANSMISSION FLUID

14/11/77 1 867.0 083.1  U O O A M Y N 0607  00.0  00.1  00.1 1  00.0 REPLACED CAPACITOR ON HOURMETER EPR      726(S-1)
                                                                     FB-726(S-1)

PARTS 2544921          GP=000010607 NO=01 LIFE= UNK  CAPACITOR HOURMETER, INSTRUMENT PANEL

15/11/77 1 879.2 084.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.1 ADDED 1 QUART OE-30 TO ENGINE

16/11/77 1 888.0 085.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.1 ADDED 1 QUART OE-30 TO ENGINE

17/11/77 1 896.6 086.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.1 ADDED 2 QUARTS OE-30 TO ENGINE SUMP

17/11/77 2 902.8 087.0  U O O A M N N 0000  00.0  01.0  02.0 2  00.0 INSTALLED BACK UP ALARM. EPR FB-348     348

17/11/77 2 902.8 087.0A U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 1 GALLON OF ENGINE OIL

19/11/77 1 918.9 088.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.1 ADDED 6 QUARTS OF ANTIFREEZE MIX TO
                                                                     COOLING SYSTEM.

19/11/77 1 920.0 089.0  U O O A M Y Y 0501  00.0  00.3  00.3 1  00.1 REPLACED TWO(2) LOST BOLTS IN SURGE      349
                                                                     TANK MOUNTING BRACKETS EPR FB-349

PARTS 17C-620H         GP=000010501 NO=02 LIFE=UNK  SCREW, CAP, HEX HEAD PHOS CTG 3/8-16 UNC
      17C-LI/H            000010501    02     UNK   11/4 IN. LG
      27E-6H              000010501    02     UNK   WASHER FLAT PHOS CTG 3/8 IN. ID 15/16 IN O
      59D-6H              000010501    02     UNK   NUT, SLFLKG, HEXAGON PHOS CTG, 3/8-16 UNC

19/11/77 2 922.2 090.0  S C C A M Y N 0000  00.0  01.0  03.0 3  00.0 50 HR. LUB LO 5-3840-201-2 EPR FB-350   350

21/11/77 1 927.0 091.0  S O C Y M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 6 QTS OF TRANSMISSION OIL.

21/11/77 1 929.5 092.0  U O O A M Y Y 0710  00.0  01.5  01.5 1  00.2 REPLACED 3RD GEAR SOLENOID COIL EPR      661
                                                                     FB-661
CRITICALITY FACTOR= 1.00

PARTS 236402           GP=000010710 NO=01 LIFE=UNK  SOLENOID-3RD GEAR ELECTRIC CONTROL VALVE ON TRANSMISSION.
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,935
 D         S OHR   A    T S E E T Q A C   G  CD    CH    MH    M OT                                         E
 A         H DON   C    A / C C M A M S   R  OL    LO    AO    E IT                                         P
 T         F OUD   T    S U H H *   T F   P  NY    OU    NU    N AM                                         R
 E         T HRS   N    K     R S            T     CR    R       GE                                         S
                                                   KS                    DESCRIPTION

29/11/77 1 955.2 093.0  S C C A M Y Y 0000  00.0  00.9  01.8 2  00.0 PERFORMED 50 HR MAINTENANCE ADDED 9 ML   663
                                                                     OF LUBRICANT TO MID MOUNT 2 MEN 50
                                                                     MINUTES TO UNCOUPLE 2 MEN 15 MINUTES TO
                                                                     RECOUPLE 2 MEN 30 MINUTES MAINTENANCE
                                                                     EPR FB-663

29/11/77 1 955.2 093.0A U C C A M N N 0000  00.0  00.2  00.2 1  00.1 ADDED 4 GALLONS OE-10 TO HYDRAULIC
                                                                     RESERVOIR.

29/11/77 2 957.0 094.0  U O O A C Y Y 1501  00.0  01.0  02.0 2  00.0 WELD, BROKEN LOWER HYDRAULIC TANK        664(259-1)
                                                                     MOUNTING BRACKET AND RE-INSTALL EPR
                                                                     FB-664(269-1)

30/11/77 1 961.7 094.1  U O O A M Y N 0607  00.0  00.3  00.3 1  00.0 REPLACED CLARK HOURMETER WITH A          726(S-2)
                                                                     SUBSTITUTE OF LIKE SIZE, OPERATING
                                                                     VOLTAGE RANGE 8-80 VOLTS. EPR
                                                                     FB-726(S-2)

03/12/77 1 981.4 095.0  U C C A C N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GAL. ENGINE OIL

03/12/77 2 987.8 096.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 2 QUARTS ENGINE OIL

05/12/77 2 01004 097.0  U O O A C Y Y 1501  00.0  00.5  00.5 2  00.0 REWELDED TOP AND BOTTOM HYDRAULIC TANK   666(269-2)
                                                                     BRACKETS EPR FB-666(269-2)

08/12/77 1 01016 098.0  U O O A M Y Y 1206  00.0  00.7  00.7 1  00.2 REMOVED PULL TYPE AIR CYLINDER,          597
                                                                     THROTTLE LOCK OUT SYSTEM - REMOVED ICE
                                                                     AND CLEANED CYLINDER, REINSTALLED
                                                                     CYLINDER EPR FB-597

08/12/77 1 01016 098.0A U O C A M N N 0309  00.0  00.5  00.5 1  00.1 REMOVED FUEL FILTER ASSEMBLY AND         598
                                                                     CLEANED, REINSTALLED FILTER ASSEMBLY.
                                                                     PART BM-34827 EPR FB-598

08/12/77 2 01016 099.0  U O O A M Y Y 0508  00.0  00.4  00.2 1  00.2 TIGHTENED LOOSE FILTER ELEMENT IN WATER  667
                                                                     FILTER ASSY EPR FB-667

10/12/77 2 01017 100.0  U O O A C Y Y 1501  00.0  19.7  31.7 2  02.0 REPAIRED TOP MOUNTING BRACKET ON         455
                                                                     HYDRAULIC TANK. (REMOVE FENDER - REMOVE
                                                                     HYD TANK - DISCONNECT ALL LINES +
                                                                     WIRING. 2NSTALL NEW MOUNTING BRACKET (3
                                                                     X 4 X 3/8 MADE IN SHOP)- RE-INSTALL
                                                                     TANK + FENDER - RE CONNECT ALL LINES +
                                                                     WIRING EPR FB-455

CRITICALITY FACTOR= 1.00
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03/05/79
MAINTENANCE TASK LOG    TEST .FAMECE1 TEST ITEM ,935
 D          S OHR   A     T S E E T Q A C   G  CD     CH     MH     M OT                                     E
 A          H DON   C     A / C C M A M S   R  OL     LO     AO     E IT                                     P
 T          F OUD   T     S U H H '   T F   P  NY     OU     NU     N AM                                     R
 E          T MRS   N     K     R S            T      CR     R        GE                                     S
                                                      KS                    DESCRIPTION

17/12/77 1 01019 101.0  U O O A C N N 2406  00.0  00.2  00.2 1  00.1 TIGHTENED FITTING, STEEL TUBING ON       511
                                                                      GROUND STEER PUMP RELIEF VALVE. EPR
                                                                      FB-511

22/12/77 1 01019 102.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.1 ADDED 1 QUART OE-10 TO TRANSMISSION
                                                                      SUMP

22/12/77 1 01019 102.0A U C C A M N N 0000  00.0  00.2  00.2 1  00.1 ADDED 5 GALLONS OE-10 TO HYDRAULIC
                                                                      RESERVOIR.

04/01/78 1 01020 103.0  U O O A M N N 2408  00.0  00.4  00.4 1  00.1 PACKING, PREFORMED PART 58K-267         486
                                                                      LEAKING, REPLACEMENT NOT AVAILABLE,
                                                                      SUBSTITUTED AVAILABLE SIMILAR PART
                                                                      RECOMMENDED PART WILL BE INSTALLED WHEN
                                                                      AVAILABLE EPR FB-486

05/01/78 1 01027 104.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.1 ADDED 5 GALLON HYDRAULIC FLUID

05/01/78 2 01034 105.0  U C C A M N N 0000  00.0  00.4  00.4 1  00.0 ADDED 5 GALLONS OF HYDRAULIC OIL -
                                                                      BECAUSE OF GASKET LEAK IN HYDRAULIC
                                                                      TANK.

07/01/78 2 01041 106.0  U O O A M Y Y 1413  00.0  00.5  00.5 1  00.0 TIGHTENED SWIVEL ELBOW ON TOP OF         517
                                                                      ACCUMULATOR ADDED 9 GALLONS HYDRAULIC
                                                                      OIL EPR FB-517

13/01/78 1 01064 107.0  U C C A M N N 0309  00.0  00.4  00.4 1  00.0 SERVICED FUEL FILTERS TOOK FUEL SAMPLE   544
                                                                      EPR FB-544

17/01/78 1 01064 108.0  S O O A M Y N 0000  00.0  11.8  19.8 4  00.0 PERFORMED 1000 HOUR MAINTENANCE EPR      555
                                                                      FB-555
PARTS MS-35802-3         GP=000010106 NO=02 LIFE=310.7 FILTER ELEMENT, OIL, FULL FLOW
        9311                000010106    02      310.7 FILTER ELEMENT, OIL, BYPASS
        5678                000010309    02      310.7 CARTRIDGE, FUEL FILTER
        LF-511              000010721    01      310.7 FILTER ELEMENT, OIL, TRANSMISSION
        299080              000010506    01      310.7 FILTER ELEMENT, WATER, CORROSION RESIST
        AC43987             000011202    01      310.7 FILTER ELEMENT, FL, POWER CLUSTER
        569022-03           000010900    01      310.7 VENT ASSY, BREATHER, HDMT
        569022-03           000011100    01      310.7 VENT ASSY, BREATHER, AXLE
        569020-03           000010700    01      310.7 VENT ASSY, BREATHER, TRANSMISSION
        HC8300              000012408    01            FILTER ELEMENT HYDRAULIC RESERVOIR
        585-267             000012408    01            PACKING, PREFORMED (FOR ABOVE)
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,935
 D          S OHR   A     T S E E T Q A C   G  CD     CH     MH    M OT                                    E
 A          H DON   C     A / C C M A M S   R  OL     LO     AO    E IT                                    P
 T          F OUD   T     S U H H '   T F   P  NY     OU     NU    N AM                                    R
 E          T MRS   N     K     R S             T     CR      R      GE                                    S
                                                      KS                     DESCRIPTION
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 17/01/78 1 01064 108.0A S O O A M Y N 0609  00.0  00.1  00.1 1  00.0 REPLACED LAMP IN LEFT REAR FLOODLIGHT    554
                                                                   EPR FB-554

 PARTS 4880              GP=000010609 NO=01 LIFE=      LAMP, FLOODLIGHT

 18/01/78 1 01072 109.0  U C C A C Y N 0000  00.0  00.5  01.0 2  00.0 UNCOUPLED FROM DUMPER SETION T-936 EPR   559
                                                                   FB-559

 18/01/78 1 01072 109.0A U C C A C Y Y                  0.8   1.6 2     COUPLED TO DUMPER WORK SECTION T-942     559
                                                                   HAD TROUBLE DUE TO ICY CONDITIONS EPR
                                                                   FB-559
CRITICALITY FACTOR= 0.50

 18/01/78 2 01073 110.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GALLON OF HYDRAULIC OIL

 19/01/78 2 01080 111.0  U O O A M Y N 0106  00.0  00.2  00.2 1  00.0 INSTALL NEW GASKETS IN FULL FLOW OIL     565
                                                                   FILTERS EPR FB-565

 PARTS 104503            GP=000010106 NO=02 LIFE=261.9 GASKET

 19/01/78 1 01080 111.0A U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 5 GALLONS HYDRAULIC OIL

 20/01/78 2 01083 112.0  U C C A M N N 2408  00.0  00.3  00.3 1  00.0 REPLACE + INSTALL NEW PACKING IN          560(486-1)
                                                                   HYDRAULIC FILLER ASSEMBLY - OLD PACKING
                                                                   WAS LEAKING EPR FB-560(486-1)

 PARTS 58K-267           GP=000012408 NO=01 LIFE=UNK   PACKING, PREFORMED

 23/01/78 2 01111 113.0  U O O A M Y Y 0612  00.0  00.2  00.4 2  00.0 TAPE WORN INSULATION ON BATTERY CABLES    591
                                                                   EPR FB-591

 25/01/78 2 01133 114.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 3 QUARTS OF ENGINE OIL

 25/01/78 2 01133 115.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 1 GALLON OF TRANSMISSION OIL

 28/01/78 2 01171 116.0  U O O A M Y N 1802  00.0  00.2  00.2 1  00.0 REPLACED CAP SCREWS IN ROADSIDE SIDE      623
                                                                   COVERS EPR FB-623

 PARTS 17C-616H          GP=000011802 NO=07 LIFE=      SCREW, CAP
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,935
 D          S OHR   A    T S E E T Q A C   G  CO    CH     MH     M OT                                    E
 A          H DON   C    A / C C M A M S   R  OL    LO     AO     E IT                                    P
 T          F OUD   T    S U H H '   T F   P  NY    OU     NU     N AM                                    R
 E          T MRS   N    K     R S            T     CR     R        GE                                    S
                                                    KS                     DESCRIPTION

 30/01/78 1 01181 116.1  U O O A M Y Y 0613  00.0  00.2  00.2 1  00.1 REPLACED CONNECTOR ON END OF WIRE TO    634
                                                                       THE ENG OIL PRESSURE SENDING UNIT. PART
                                                                       2548815 EPR FB-634
 ------------------------------------------------------------------------------------------------------------
 30/01/78 1 01188 116.2  U O O A M Y Y 0601  00.0  00.8  01.6 2  00.1 REVERSED ONE ALTERNATOR BELT AND        635
                                                                       ADJUSTED BELTS. PART NO. 217695 EPR
                                                                       FB-635

 30/01/78 2 01193 117.0  U C C A M Y N 0607  00.0  00.1  00.1 1  00.0 TAPED WIRE AND REINSTALLED PANEL LAMP   629
                                                                       EPR FB-629
 ------------------------------------------------------------------------------------------------------------
 01/02/78 1 01205 118.0  U O O A M Y Y 1501  00.0  01.6  04.8 3  01.2 CLEANED FROZEN SOIL FROM AROUND LOCK    637
                                                                       RING ASSY READJUSTED LOCKING PRESSURE
                                                                       TO 700 PSI PERFORMED 50 HOUR SERVICE
                                                                       EPR FB-637
CRITICALITY FACTOR= 1.00
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 03/02/78 2 01233 118.1  U O O A C Y Y 1501  00.0  00.3  00.3 1  00.0 WELDED BOTTOM HYDRAULIC RESERVOIR       705(269-3)
                                                                       BRACKET EPR FB-705(269-3)

 03/02/78 2 01240 119.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 2 GALLONS HYDRAULIC OIL
 ------------------------------------------------------------------------------------------------------------
 21/02/78 1  1255 120.0  U F F A C N N 0101  00.0  05.2  05.2 1  01.9 ADJUSTED THE FUEL RACK AND VALVES       748
                                                                       REPLACEMENT ENGINE FROM MTSP UNDER
                                                                       WARRANTY WORK COMPLETED BY CUMMINS
                                                                       SERVICE PERSONNEL. ENGINE INSTALLED AT
                                                                       1251.0 HRS. EPR FB-748
 ------------------------------------------------------------------------------------------------------------
 21/02/78 2  1255 120.0A U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GALLON ENGINE OIL

 21/02/78 1  1255 120.0B U C C A M N N 0000  00.0  00.1  00.1 1  00.1 ADDED 3 GALLONS OF OIL TO ENGINE

 24/02/78 1  1265 121.0  S C C A M N N 1801  00.0  00.2  00.2 2  00.0 REMOVED THE ROPS IN PREPARATION FOR AIR 799
                                                                       TRANSPORTABILITY STUDY EPR FB-799
 ------------------------------------------------------------------------------------------------------------
 24/02/78 2  1265 121.0A U O O A M Y Y 1501  00.0  00.5  00.5 1  00.0 STRAIGHTEN OUT BENT BRACKET ON THE       801
                                                                       FRAME ASSEMBLY COUPLER. EPR FB-801

 24/02/78 1  1265 121.0B U O O A M Y Y 1413  00.0  00.2  00.2 1  00.1 TIGHTENED TEE TUBE FITTING ON STEERING   802
                                                                       SYSTEM ACCUMULATOR. EPR FB-802
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,935
 D          S OHR   A     T S E E T Q A C   G  CO     CH     MH    M OT                                   E
 A          H DON   C     A / C C M A M S   R  OL     LO     AO    E IT                                   P
 T          F OUD   T     S U H H *   T F   P  NY     OU     NU    N AM                                   R
 E          T MRS   N     K     R S            T      CR     R      GE                                    S
                                                      KS                  DESCRIPTION

24/02/78 2  1265 122.0  U C C A M N N 1802  00.0  00.1  00.1 1  00.0 TIGHTEN LOOSE BOLT IN ENGINE SIDE COVER  803
                                                                   EPR FB-803

06/03/78 1 01271 123.0  U O O A M N N 1801  00.0  01.5  04.5 3  00.0 REINSTALLED ROPS, CANVAS, AND CAB FRAME  860
                                                                   EPR FB-860

06/03/78 1 01273 124.0  U O O A M Y Y 0710  00.0  01.2  22.9 2  12.3 DIAGNOSED TRANSMISSION SHIFTING          859
                                                                   PROBLEMS REPLACED 2ND GEAR SOLENOID EPR
                                                                   FB-85
CRITICALITY FACTOR= 1.00

 PARTS 236402               GP=000010710 NO=01 LIFE=023.9 SOLENOID

06/03/78 2 01275 125.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 2 QTS OF ENGINE OIL

10/03/78 1 01282 126.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.1 ADDED 2 GALLONS TRANSMISSION FLUID

23/03/78 2 01287 127.0  U F F C A Y Y 0710  00.0  43.2  80.6 4  00.0 REAR BEARING ASSEMBLY IN TRANSMISSION    905
                                                                   DISINTEGRATED CAUSING A BREAK IN THE
                                                                   REAR BEARING CAP. REMOVED TRANSMISSION,
                                                                   DISASSEMBLED, INSTALLED BEARING ASSY
                                                                   RE-ASSEMBLED + REINSTALL BACK IN THE
                                                                   POWER SECTION EPR FB-905
CRITICALITY FACTOR= 1.00

 PARTS 233968               GP=000010710 NO=01 LIFE=UNK    REAR BEARING ASSEMBLY
       10J-15                  000010710    01      UNK    BALL, BEARING 15/32 IN. DIA.
       233955                  000010710    01      UNK    BEARING CAP, REAR

27/03/78 1 01287 128.0  U F F A C N N 0302         2.5   2.5 1   2.5 DETERMINATION OF CAUSE WHY NEW FUEL      928
                                                                   PUMP WOULDN'T ALLOW THE ENGINE TO IDLE.
                                                                   EPR FB-928

27/03/78 1 01287 128.0A U F F A C Y Y 0302         3.5   3.5 1       REMOVED FUEL PUMP, REINSTALLED REBUILT   928(S-1)
                                                                   PUMP, AND RECALIBRATED. EPR FB-928(S-1
CRITICALITY FACTOR= 1..0

 PARTS 204161               GP=000010302 NO=01 LIFE=00000 FUEL PUMP

28/03/78 1 01287 129.0  U O O A C Y N              0.2   0.2 1   0.2 DETERMINATION AS TO WHY RPM GAUGE WOULD  929
                                                                   INDICATE INTERMITENTLY.FOUND FAULT TO
                                                                   BE AT THE TACH GENERATOR. EPR FB-929
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,935
D            S OHR   A     T S E E T Q A C    G  CO      CH      MH     M OT                                               E
A            H DON   C     A / C C M A M S    R  OL      LO      AO     E IT                                               P
T            F OUD   T     S U H H '   T F    P  NY      OU      NU     N AM                                               R
E            T MRS   N     K     R S             T       CR      R        GE                                               S
                                                     KS                       DESCRIPTION

31/03/78     1288 129.1  U O O A    Y Y 2406          0.3    0.3 1        REPLACED O-RING ON GROUND DRIVEN            961
                                                                        EMERGENCY STEER PUMP OUTLET HOSE EPR
                                                                        FB-961

PARTS 58K-219               GP=000012406 NO=01 LIFE=        PACKING PREFORMED

31/03/78   01288 129.1A U O O A M Y Y 1201       01.0   01.0 1        REPLACED PARKING BRAKE PACS. EPR FB-962   962

PARTS 1990761               GP=000011201 NO=02 LIFE=        HOLDER ASS, PAD

31/03/78     1288 129.1B U F F A M N N 1410         6.0   12.0 2        REPLACED VARIABLE DISPLACEMENT PUMP.        963
                                                                        EPR FB-963

PARTS PV86-RS-20-C-10S124 GP=000011410 NO=01 LIFE=        VARIABLE DISPLACEMENT PUMP.

31/03/78     1288 129.1C U O O A    N N 0305          0.1    0.1 1        TIGHTEN FITTING TURBOCHARGER EPR FB-965   965
                                                                        ITEM #1

31/03/78     1288 129.1D U C C A    N N 0612          0.4    0.4 1        CLEANED AND SERVICED BATTERIES AND          965
                                                                        BATTERY PACK EPR FB-965

31/03/78     1288 129.1E U C C A    Y N 2202          0.2    0.2 1        REPLACED WIPER MOTOR FILTER EPR FB-965     965
                                                                        ITEM#3

PARTS 5206381               GP=000014636 NO=02 LIFE=        FILTER,AIR, WIPER MOTOR

31/03/78     1288 129.1F U O O A    Y Y 1414          0.2    0.2 1        TIGHTEN FITTING ROTARY MANIFOLD EPR         965
                                                                        FB-965

31/03/78     1288 129.1G U C C A    Y N 2407          0.1    0.1 1        TIGHTEN PACKING RETAINING NUT ON DOLLY      965
                                                                        WHEEL GLOBE VALVE EPR FB-965 ITEM#5

31/03/78     1288 129.1H U O O A    Y N 0609          0.1    0.1 1        RESHIFTED HOSES AND INSTALLED TIE CLAMP   965
                                                                        EPR FB-965 ITEM#6

PARTS SST2M-4               GP=000010609 NO=01 LIFE=        CABLE, TIE

31/03/78     1288 129.1I U C C A    N N 2407          0.1    0.1 1        TIGHTEN HOSE FITTING ON DOLLY WHEEL         965
                                                                        HYDRAULIC CYLINDER. EPR FB-965 ITEM #7
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,935
 D         S OHP    A     T S E E T Q A C   G  CD     CH      MH    M DT                                           E
 A         H DON    C     A / C C M A M S   R  OL     LO      AO    E IT                                           P
 T         F OUD    T     S U H H '   T F   P  NY     OU      NU    N AM                                           R
 E         T HRS    N     K     R S            T      CR      R       GE                                           S
                                                      KS                     DESCRIPTION

31/03/78     1288 129.1J U O O A    Y Y 0613          0.2    0.2 1     TIGHTEN SENDING UNIT IN TRANSMISSION     965
                                                                     EPR FB-965 ITEM #8

31/03/78     1288 129.1K U O O A    Y Y 0603          0.5    0.5 1     REROUTE STARTER ELECTRICAL CABLES EPR    965
                                                                     FB-965 ITEM #9

31/03/78     1288 129.1L U O O A    Y Y 1413          0.3    0.3 1     TIGHTEN FITTING BOTTOM OF ACCUMLATOR     965
                                                                     EPR FB-965 ITEM #

31/03/78     1288 129.1M U O O A    N N 0304          0.2    0.2 1     CLEAN AND SERVICED AIR CLEANER EPR       965
                                                                     FB-965 ITEM #11

31/03/78     1288 129.1N U O O A    Y N 7638          0.3    0.3 1     STRAIGHTEN FIRE EXTINGUISHER MOUNTING    965
                                                                     BRACKET EPR FB-965 ITEM#12

31/03/78     1288 129.1O U O O A    Y N 0613          0.2    0.2 1     TIGHTEN WIRING HARNESS CANNON PLUG AT    965
                                                                     ROTARY MANIFOLD EPR FB-965 ITEM#13

31/03/78     1288 129.1P U C C A    N N 2406          0.1    0.1 1     TIGHTEN HYDRAULIC LINE HOSE CLAMPS       965
                                                                     UNDER FENDER AIR CLEANER SIDE EPR
                                                                     FB-965

31/03/78     1288 129.1Q U O O A    Y N 1501           .2     .2 1     TIGHTENED HYDRAULIC LINE FITTING         965
                                                                     COUPLER UNLOCK CYLINDER EPR FB-965

31/03/78     1288 129.1R U C C I    Y N 0607          0.1    0.1 1     REPLACED TORQUE CONVERTER LOCK UP LIGHT  965
                                                                     EPR FB-965

PARTS 2547368            GP=000010607 NO=01 LIFE=      WARNING LAMP

31/03/78     1288 129.1S U C C A    Y N 0607          0.1    0.1 1     REPLACED PANEL LAMP ON RIGHT HAND        965
                                                                     INSTRUMENT PANEL. EPR FB-965 ITEM #17

PARTS M-4489             GP=000010607 NO=01 LIFE=      PANEL LAMP
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,936
 D           S OHR   A       T S E E T Q A C    G  CD      CH      MH     M DT                                               E
 A           H DON   C       A / C C M A M S    R  OL      LO      AO     E IT                                               P
 T           F OUD   T       S U H H '   T F    P  NY      OU      NU     N AM                                               R
 E           T MRS   N       K     R S             T       CR      R        GE                                               S
                                                           KS                     DESCRIPTION

01/08/77 1 024.9 001.0  S O O I C N N 1311  00.0  00.8  01.6 2  00.0 ROTATE RIGHT REAR DUMPER STEEL WHEEL        3
                                                                     ASSEMBLY AND TIRE TO LEFT SIDE POWER
                                                                     SECTION. PLACE LEFT SIDE ALUMINUM WHEEL
                                                                     ASSEMBLY AND TIRE TO RIGHT REAR DUMPER.
                                                                     EPR FB-3 STEP MISSING IN MANUAL FOR
                                                                     REPLACING TIRE AND WHEEL ASSEMBLY

03/08/77 1 032.8 002.0  U O O I C N N 1311  00.0  00.8  01.2 2  00.2 SAFETY RIM WOULD NOT SEAT PROPERLY ON       1056
                                                                     WHEEL. RIM GROUND DOWN SLIGHTLY TO MATE
                                                                     WITH WHEEL SAFETY RIM NOT SHOWN AS PART
                                                                     OF WHEEL ASSEMBLY IN TIN DEF 5- -201-
                                                                     20 AND P EPR FB-1056

09/08/77 1 056.0 003.0  U O O I C Y Y 1801  00.0  00.2  00.2 1  00.0 REPLACED BROKEN QUICK RELEASE PIVOT PIN     14
                                                                     ON DUMPER EPR FB-14

PARTS CL-16-BLP-C-2.30     GP=000081801 NO=01 LIFE=       PIN, QUICK RELEASE, ROADSIDE TAILGATE

09/08/77 2 061.0 004.0  U O O A C Y Y 1201  00.0  00.5  00.5 1  00.0 REPLACED BROKEN RETAINING SPRING ON         1057
                                                                     SHOE OF THE DUMPER PARKING BRAKE
                                                                     ASSEMBLY EPR FB-1057

PARTS 949444               GP=000081201 NO=01 LIFE=       RETAINING SPRING

11/08/77 1 076.9 005.0  S C C A C Y N 0000  00.0  00.2  00.2 1  00.1 50 HOUR MAINTENANCE TO DUMPER SECTION       1030
                                                                     ADDED 300 ML. BRAKE FLUID TO RESERVOIR
                                                                     EPR FB-1030

11/08/77 2 083.4 006.0  U O O A C Y N 0609  00.0  00.3  00.3 1  00.0 REPLACED BURNED OUT CURB SIDE REAR          1058
                                                                     CLEARANCE LAMP EPR FB-1058

PARTS MS15570-1251         GP=000080609 NO=01 LIFE=       BULB, CLEARANCE LAMP

13/08/77 1 092.0 007.0  U O O I C Y Y 1801  00.0  00.2  00.2 1  00.0 REPLACED BROKEN QUICK RELEASE PIVOT PIN     20(14-1)
                                                                     ON DUMPER. EPR FB-20(14-1)

PARTS CL-16-BLP-C-2.30     GP=000081801 NO=01 LIFE=00035 PIN, QUICK RELEASE, ROADSIDE TAILGATE.

15/08/77 1 103.4 008.0  U C C I C Y N 4316  00.0  00.1  00.1 1  00.2 1. LUBRICATE SHAFT ON DUMPER LATCH          21
                                                                     CONTROL VALVE 2. INCLUDE THIS PROCEDURE
                                                                     IN LUBE ORDER EVERY 10 HOURS 3. EPR
                                                                     FB-21
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,936
 D           S OHR    A     T S E E T Q A C    G  CO     CH      MH     M DT                                                    E
 A           H DON    C     A / C C M A M S    R  OL     LO      AO     E IT                                                    P
 T           F OUD    T     S U H H '   T F    P  NY     OU      NU     N AM                                                    R
 E           T MRS    N     K     R S             T      CR      R       GE                                                     S
                                                         KS                         DESCRIPTION

15/08/77 1 103.4 008.0A S C C A C Y N 0000  00.0  00.3  00.3 1  00.1 50 HOUR MAINTENANCE TO DUMPER SECTION      24
                                                                     CHECKED POWER CLUSTER RESERVOIR FLUID
                                                                     LEVEL,CHECK MIDMOUNT BEARINGS - ADDED
                                                                     135 ML. BRAKE FLUID. EPR FB-24

15/08/77 1 106.8 009.0  U C C A C Y N 0609  00.0  00.3  00.3 1  00.1 REPLACED LIGHT BULB IN CURBSIDE REAR      1059
                                                                     CLEARANCE LAMP OF DUMPER REPLACED LIGHT
                                                                     BULB IN ROADSIDE REAR TAILIGHT LAMP OF
                                                                     DUMPER EPR FB-1059

PARTS MS15570-623           GP=000080609 NO=01 LIFE=       REAR COMPOSITE REAR LAMP
      MS15570-1251             000080609    01       25.2  REAR CLEARANCE LAMP OF DUMPER

16/08/77 1 114.8 009.1  U C C A C Y N 0609  00.0  00.2  00.2 1  00.1 REPLACED BULB IN ROADSIDE TAIL-LIGHT      1115
                                                                     LAMP OF DUMPER SECTION. EPR FB-1115

PARTS MS15570-623           GP=000080609 NO=01 LIFE=008.0 BULB, TAILLIGHT, ROADSIDE

19/08/77 1 149.8 010.0  S C C A C Y N 0000  00.0  00.2  00.2 1  00.0 1. PERFORMED 50 HOUR MAINTENANCE ON      1031
                                                                     DUMPER UNIT A. INSPECT/SERVICE MASTER
                                                                     CYLINDER RESERVOIR -LEVELS OIL - (.1
                                                                     HOUR) B. INSPECT/SERVICE MONMOUNT
                                                                     BEARINGS-ADDED 65 MLS OIL - (.1 HOUR)
                                                                     EPR FB-1031

19/08/77 1 151.0 011.0  U 0 0 A C Y N 0609  00.0  00.2  00.2 1  00.0 REPLACED CURBSIDE TAIL-LIGHT LENS EPR     28(S-1)
                                                                     FB-28(S-1)

PARTS 11639535              GP=000080609 NO=01 LIFE=UNK    DOOR ASSEMBLY, COMPOSITE, REAR LIGHT

22/08/77 1 168.2 012.0  U 0 0 A C Y N 0609  00.0  00.1  00.1 1  00.0 REPLACED CURBSIDE REAR TAIL-LIGHT LENS    1060(28-1)
                                                                     EPR FB-1060(28-1)

PARTS 11639535              GP=000080609 NO=01 LIFE=017.2 DOOR ASSEMBLY, COMPOSITE, REAR LIGHT

22/08/77 2 176.3 013.0  U 0 0 A C Y N 1204  00.0  00.5  00.5 1  00.0 REMOVED AND CLEANED OUT FILLER CAP      1055
                                                                     (POWER CLUSTER) REINSTALLED EPR FB-1055

23/08/77 1 179.3 013.1  U O O I C Y Y 1801  00.0  00.1  00.1 1  00.0 REPLACED BROKEN QUICK RELEASE PIVOT PIN  41(14-2)
                                                                     ON DUMPER TAILGATE EPR FB-41(14-2)

PARTS CL-16-BLF-C-2.30      GP=000081801 NO=01 LIFE=       PIN, QUICK RELEASE, CURBSIDE
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,936
 D        S OHR   A     T S E E T Q A C   G  CO    CH    MH    M OT                                  E
 A        H DON   C     A / C C M A M S   R  OL    LO    AO    E IT                                  P
 T        F OUD   T     S U H H *   T F   P  NY    OU    NU    N AM                                  R
 E        T HRS   N     K     R S            T     CR    R       GE                                  S
                                                   KS                 DESCRIPTION

24/08/77 1 192.6 014.0  U C C A C Y N 0609  00.0  00.1  00.1 1  00.0 REPLACED CURBSIDE REAR TAIL-LIGHT BULB   44
                                                                     EPR FB-44

PARTS 6240-00-044-6914      GP=000080609 NO=01 LIFE=041.6 BULB, INCANDESENT

25/08/77 1 200.5 015.0  S C C A C Y N 0000  00.0  00.3  00.3 1  00.0 PULLED 50 HOUR MAINTENANCE A. CHECKED     1032
                                                                     MASTER CYLINDER RESERVOIR - LEVEL OK B.
                                                                     CHECKED MIDMOUNT BEARING FLUID LEVEL -
                                                                     ADDED 65 ML. EPR FB-1032

01/09/77 1 253.0 016.0  U O O A C Y Y 0609  00.0  01.0  01.0 1  00.1 REPLACED ENTIRE REAR TAIL-LIGHT           59
                                                                     ASSEMBLY. TAILLIGHT BROKEN DURING TEST
                                                                     DEP 5--208-34 + P (FIG 1. 08). EPR
                                                                     FB-59

PARTS 11614157              GP=000080609 NO=01 LIFE=073.3 LIGHT-TAIL, STOP, MKR.

01/09/77 1 253.0 016.0A S O O A C Y N 0000  00.0  02.0  02.0 1  00.0 250 HOUR MAINTENANCE NO PARTS REPLACED    1034
                                                                     ; LUBRICATED EPR FB-1034

01/09/77 1 253.2 016.0B U O O I C Y Y 0900  00.0  03.5  07.0 2  00.5 REPLACED MIDMOUNT BEARING ON DUMPER       24(S-1)
                                                                     SECTION BEARING WAS LOSING OIL EPR
                                                                     FB-24(S-1)
CRITICALITY FACTOR= 1.00

PARTS 2547643               GP=000080900 NO=01 LIFE=      BEARING ASSY, MID-MT (DEP 5-- 208-34 + P FIG. 4. )

01/09/77 2 253.7 017.0  U O O A C Y N 1202  00.0  00.5  00.5 1  00.0 ADJUSTED SERVICE BRAKES ON DUMPER. THEY   1068
                                                                     WERE USING TOO MUCH AIR. EPR FB-1068

03/09/77 1 269.2 018.0  U O O A C Y Y 0900  00.0  02.3  02.3 1  01.3 ADJUSTED ACTUATOR FOR MIDMOUNT BEARING;   65
                                                                     IT WAS NOT ENGAGING THE MIDMOUNT
                                                                     BEARING OF THE DUMPER TO THAT OF THE
                                                                     POWER UNIT. DUE TO ERROR IN REASSEMBLY
                                                                     AFTER REPLACING MIDMOUNT BEARING. EPR
                                                                     FB-65
CRITICALITY FACTOR= 1.00

07/09/77 1 296.6 019.0  U C C A C Y Y 1801  00.0  00.1  00.1 1  00.0 1. REPLACED QUICK RELEASE PIN ACTING AS   84(14-3)
                                                                     TAIL GATE PIVOT PIN 2. PIN CAME APART
                                                                     DURING OPERATION OF VEHICLE EPR
                                                                     FB-84(14-3)

PARTS 2546312               GP=000081801 NO=01 LIFE=027.3 PIN, QUICK RELEASE.
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,936
 D          S OHR    A     T S E E T Q A C   G  CO     CH      MH     M DT                                                E
 A          H DON    C     A / C C M A M S   R  OL     LO      AO     E IT                                                P
 T          F OUD    T     S U H H '   T F   P  NY     OU      NU     N AM                                                R
 E          T MFS    N     K     R S             T     CR       R      GE                                                 S
                                                       KS                      DESCRIPTION

 08/09/77 1 302.9 020.0  S C C A C Y N 0000  00.0  00.2  00.2 1  00.1 50 HOUR MAINTENANCE CHECKED LEVEL IN      1035
                                                                      MASTER CYLINDER RESERVOIR. CHECKED MDMT
                                                                      BEARING LEVEL-ADDED 90 MLS OF OIL.
                                                                      TIGHTENED DRAIN PLUG ON MDMT BEARING.
                                                                      EPR FB-1035

 13/09/77 1 343.8 021.0  S C C A C Y N 0000  00.0   0.2   0.2 1  00.0 50 HOUR MAINTENANCE 39ML OF FLUID ADDED  23(S-1)
                                                                      TO REAR MIDMOUNT BEARING. INSTALLED
                                                                      BREATHERS FROM 250 HOUR MAINTENANCE.
                                                                      EPR FB-23(S-1)

 PARTS 569022-03          GP=000081000 NO=01 LIFE=         VENT ASSY, BREATHER, AXLE
       569022-03             000080900   01                VENT ASSY, BREATHER, MIDMOUNT
       AC43887               000081204   01                FILTER ELEMENT, FL, POWER CLUSTER

 14/09/77 1 357.1 021.1  U C C A C Y N 0609  00.0  00.1  00.1 1  00.0 REPLACED BULB IN ROADSIDE TAIL LIGHT     133
                                                                      EPR FB-133

 PARTS MS35478-1683       GP=000080609 NO=01 LIFE=  UNK BULB, INCANDESCENT

 19/09/77 1 409.9 021.2  S C C A M Y N 0000        00.2   0.2 1       PERFORMED 50 HOUR SERVICE. EPR FB-1036    1036

 24/09/77 1 452.5 022.0  S C C A M Y N 0000  00.0  00.2  00.2 1  00.1 PERFORMED 50 HOUR MAINTENANCE EPR         1037
                                                                      FB-1037

 24/09/77 1 452.5 022.0A U C C A M Y Y 1801  00.0  00.1  00.1 1  00.0 REPLACED BROKEN TAIL GATE PIVOT PIN.      196(14-4
                                                                      EPR FB-196(14-4)

 PARTS CL-16-BLF-L-2.30   GP=000081801 NO=01 LIFE=155.9 PIN, QUICK RELEASE

 27/09/77 1 479.7 023.0  U F F A C Y Y 1801  00.0  03.1  06.2 2  00.0 REPLACED TAIL GATE HINGE PIN;             200(14-5
                                                                      STRAIGHTENED BENT PIVOT HINGE AND
                                                                      REINSTALLED TAILGATE. EPR FB-200(14-5)
CRITICALITY FACTOR= 0.50

 PARTS CL-16-BLF-L-2.30   GP=000081801 NO=01 LIFE=020.5 PIN, QUICK RELEASE

 28/09/77 1 496.4 024.0  U C C A M Y N 1801  00.0  00.1  00.1 1  00.0 REPLACE TAIL GATE PIVOT PIN EPR           212(14-6
                                                                      FB-212(14-6)

 PARTS CL-16-BLF-L-2.30   GP=000081801 NO=01 LIFE=011.5 PIN, QUICK RELEASE
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,936
D          S OHR   A     T S E E T Q A C   G  CD     CH     MH    M DT                                       E
A          H DON   C     A / C C H A M S   R  OL     LO     AO    E IT                                       P
T          F OUD   T     S U H H '   T F   P  NY     OU     NU    N AM                                       R
E          T MRS   N     K     R S            T      CR     R       GE                                       S
                                                     KS                DESCRIPTION

28/09/77 2 491.2 025.0  U C C A M Y N 1801  00.0  00.1  00.1 1  00.0 REPLACED TAILGATE PIVOT PIN EPR      215(14-7)
                                                                     FB-215(14-7)

PARTS CC-16-BLF-L-230      GP=000081801 NO=01 LIFE=011.5 PIN, QUICK RELEASE

28/09/77 2 500.7 026.0  S O D A M Y N 0000  00.0   2.5  05.0 2  00.0 PERFORMED 500 HOUR MAINTENANCE ON    1038
                                                                     DUMPER SECTION EPR FB-1038

PARTS 569022-03            GP=000081000 NO=01 LIFE=156.9 VENT ASSY, BREATHER, AXLE
      569022-03               000080900    01      156.9 VENT ASSY, BREATHER, MIDMOUNT
      AC43887                 000081204    01      156.9 FILTER ELEMENT, FL, POWER CLUSTER

28/09/77 2 500.7 026.0A S C C A M Y N 0609  00.0  00.3  00.3 1  00.0 1. REPLACED BURNED OUT LIGHT BULBS EPR  190
                                                                     FB-190

PARTS 6240-00-044-6914     GP=000080609 NO=01 LIFE=198.6 ROADSIDE STOP LIGHT BULB
      6240-00-019-3093        000080609    01      081.8 REAR SERVICE LIGHT ROADSIDE
      6240-00-019-3093        000080609    01      087.5 REAR SERVICE LIGHT CURBSIDE

12/10/77 1 601.1 028.0  S C C A M Y N 0000          0.3   0.3 1        50 HR MAINTENANCE. EPR FB-1039     1039

17/10/77 1 653.4 029.0  S C C A M Y N 0000  00.0   0.3   0.3 1         PERFORMED 50 HR MAINTENANCE PER LUBE 1041
                                                                     ORDER LO5- -208-12. ADDED 21 ML. OF
                                                                     OE/HDO TO THE MIDMOUNT BEARING EPR
                                                                     FB-1041

18/10/77 2 664.0 029.1  U C C A M Y Y 0609  00.0  00.1  00.1 1  00.0 REPLACED LAMP IN CURB SIDE TAIL LIGHT 254
                                                                     EPR FB-254

PARTS MS15570-623          GP=000080609 NO= 1 LIFE=003.0 LAMP INCANDESCENT

20/10/77 1 685.1 030.0  U O D A M Y N 1312  00.0  00.6  00.6 1  00.0 INFLATED BOTH LEFT + RIGHT REAR TIRES
                                                                     TO 55 PSI. TIRE PRESSURES WERE LOW AT
                                                                     50 PSI.

22/10/77 1 702.5 031.0  S C C A M Y N 0000  00.0   0.1   0.1 1         PERFORMED 50 HOUR MAINTENANCE PER LUBE 1042
                                                                     ORDER LO5- -208-12. EPR FB-1042

31/10/77 1 753.3 032.0  S O D A M Y N 0000  00.0  02.5  03.5 2  00.0 PERFORMED 250 HR MAINTENANCE EPR     1044
                                                                     FB-1044

PARTS 569022-03            GP=000081000 NO=01 LIFE=252.6 VENT ASSY, BREATHER, AXLE
      569022-03               000080900    01      252.6 VENT ASSY, BREATHER, MIDMOUNT
      AC43887                 000081204    01      252.6 FILTER ELEMENT, FL, POWER CLUSTER
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,936
 D          S OHR   A   T S E E T Q A C   G  CD    CH     MH    M OT                                       E
 A          H DON   C   A / C C M A M S   R  OL    LC     AO    E IT                                       P
 T          F OUD   T   S U H H *   T F   P  NY    OU     NU    N AM                                       R
 E          T MRS   N   K     R S            T     CR     R      GE                                        S
                                                   KS                   DESCRIPTION

05/11/77 1 805.1 033.0  S C C A M Y N 0000  00.0  0.4   0.4 1      PERFORMED 50 HR MAINTENANCE PER LUBE     1043
                                                                 ORDER L05- 208-12. EPR FB-1043

05/11/77 1 810.4 034.0  S F F I C Y N 1801        02.4  07.2 3  00.0 ENLARGED DUMPER BODY AND TAILGATE HINGE  255(S-2).
                                                                 PIN HOLES. INSTALLED (2) 1.125 IN DIA
                                                                 ,4.5IN LONG CAPSCREWS & NUTS IN PLACE
                                                                 OF DAMAGED QUICK RELEASE PINS EPR
                                                                 FB-255(S-2).

08/11/77 1 822.8 035.0  U O O A M Y N 1202        01.2  01.7 2     ADJUSTED SERVICE BRAKES DRAINED BRAKE    345(S-2)
                                                                 SYSTEM, REFILLED WITH SILICONE FLUID
                                                                 READJUSTED BRAKES. EPR FB-345(S-2)

19/11/77 2 922.2 036.0  S C C A M Y N             00.3  00.3 1  00.0 50 HR LUB L05- -208-12 EPR FB-350        350

19/11/77 2 924.2 037.0  U O O A M Y Y 2403  00.0  00.1  00.1 1  00.0 RE THREAD BROKEN THREADED END OF THE     660
                                                                 RAISE/LOWER CONTROL ROD EPR FB-660

28/11/77 2 948.8 038.0  U C C A M Y N 0609  00.0  00.5  00.5 1  00.0 REPLACED BURNED OUT LAMP IN ROAD SIDE    662
                                                                 CLEARANCE LIGHT EPR FB-662

PARTS MS-15570-1251        GP=000080609 NO=01 LIFE=        LAMP, INCANDESCENT

29/11/77 1 955.2 039.0  S C C A M Y N 0000  00.0  00.7  01.4 2  00.0 PERFORMED 50 HR MAINTENANCE 2 MEN X 50   663
                                                                 MINUTES TO UNCOUPLE 2 MEN X 15 MINUTES
                                                                 TO RECOUPLE 2 MEN X 30 MINUTES
                                                                 MAINTENANCE EPR FB-663

17/01/78 1 01064 040.0  S O O A M Y N 0000  00.0  05.1  07.0 3  00.0 PERFORMED 1000 HOUR MAINTENANCE EPR      555
                                                                 FB-555

PARTS 569022-03            GP=000081000 NO=01 LIFE=311.7 VENT ASSY, BREATHER, AXLE
      569022-03               000080900    01      311.7 VENT ASSY, BREATHER, MIDMOUNT
      AC43887                 000081204    01      311.7 FILTER ELEMENT, FL, POWER CLUSTER

17/01/78 1 01064 040.0A U C C A M Y N 0900  00.0  00.1  00.1 1  00.0 REPLACED PIPE PLUG IN MIDMOUNT BEARING   556
                                                                 HOUSING EPR FB-556

PARTS 569022-03            GP=000080900 NO=01 LIFE=10580 PLUG, PIPE
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,936
 D          S OHR   A    T S E E T Q A C   G  LD     CH     MH    M DT                                   E
 A          H DON   C    A / C C M A M S   R  OL     LO     AO    E IT                                   P
 T          F OUD   T    S U H H *   T F   P  NY     OU     NU    N AM                                   R
 E          T MRS   N    K     R S            T      CR      R     GE                                    S
                                                     KS                 DESCRIPTION

18/01/78 1 01072 041.0   S C C A C N N 0000  00.0  00.0  00.0 0  00.0 UNCOUPLED FROM POWER SECTION T-935        559
                                                                     (TIME CHARGED TO T-935) EPR FB-559

28/02/78 1  1072 042.0   U O O A M Y N 1503  00.0  00.2  00.2 1  00.1 REMOVED AND STRAIGHTENED COTTER PIN        822
                                                                     (SAFETY PIN) REINSTALLED COTTER PIN ON
                                                                     PINTLE HOOK. (TECHNICAL INSPECTION) EPR
                                                                     FB-822

28/02/78 1  1072 042.0A  U O O A M Y N 1208  00.0  00.5  00.5 1  00.1 REINSTALLED AIR MANIFOLD HANDLE + PIVOT    822
                                                                     PIN EPR FB-822

28/02/78 1  1072 042.0B  U O O A M Y N 1201  00.0  00.5  00.5 1  00.1 REPAIRED PARKING BRAKE HANDLE ADJUSTER     822
                                                                     (TECHNICAL INSPECTION) EPR FB-822

06/03/78 1 01083 043.0   U F F A C N N 1801  00.0  02.7  02.7 1  00.2 1. REPAIR DAMAGE TO DUMPER BODY 2.         869
                                                                     REMOVED REAR COMPOSITE LIGHT
                                                                     INSTALLED NEW COMPOSITE LIGHT, 3.
                                                                     REPAIRED ROCK GUARD 4. SPOT PAINTED
                                                                     DAMAGED AREAS. EPR FB-869

04/03/78 2 01083 043.0A  S C C A M Y N       00.0  00.2  00.6 3  00.0 PERFORMED 50 HOUR MAINTENANCE EPR          839
                                                                     FB-839

07/03/78 2 01083 044.0   U O O A M N N 1801  00.0  00.5  00.5 1  00.0 WELD HAND HOLDS ON REAR OF DUMPER BODY     880
                                                                     EPR FB-880

31/03/78   01086 045.0   U C C A   Y N 2406         0.1   0.1 1        REPLACED PLUG, QUICK DISC, INCIDENT 1,    930
                                                                     EPR FB-930

PARTS C-25                  GP=000082406 NO=01 LIFE=      PLUG, QUICK DISC

31/03/78   01086 045.0A  U C C A   Y N 1801         0.1   0.1 1        REPLACED CABLE AND RING ON DROP STAND,    930
                                                                     INCIDENT 2, EPR FB-930

PARTS CL-23-KA-12.00        GP=000081801 NO=01 LIFE=      CABLE, DROP STAND

31/03/78   01086 045.0B  S C C A   N N 0000         0.1   0.1 1        ADDED 1/8 PT. OIL TO MIDMOUNT BEARING.    930
                                                                     (MAINTENANCE TIME DOES NOT INCLUDE
                                                                     UNCOUPLING AND COUPLING TIMES)EPR
                                                                     FB-930
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03/05/79
MAINTENANCE TASK LOG   TEST_,FAMECE1 TEST ITEM ,936
 D          S OHR   A    T S E E T Q A C   G  CO     CH     MH    M DT                                    E
 A          H DON   C    A / C C M A M S   R  OL     LO     AO    E IT                                    P
 T          F OUD   T    S U H H '   T F   P  NY     OU     NU    N AM                                    R
 E          T MRS   N    K     R S             T     CR      R      GE                                    S
                                                     KS                  DESCRIPTION

 31/03/78   01086 045.0C U O O A   Y N 1801        0.1    0.1 1     REMOUNTED TIE-DOWN SHAKLE CHAIN. EPR    930
                                                                  930 EPR FB-930

 31/03/78   01086 045.0D U C C A   N N 0900        0.1    0.1 1     REPLACED BREATHER AT MIDMOUNT, INCIDENT 930
                                                                  5, EPR FB-930

 PARTS 569022-03          GP=000080900 NO=01 LIFE=    22 VENT ASSY, BREATHER, MIDMOUNT

 31/03/78   01086 045.0E U C C A   N N 1208        0.1    0.1 1     TIGHTENED AIR LINE BRACKET BOLTS EPR    930
                                                                  FB-930

 31/03/78   01086 045.0F U C C A   Y N 0900        0.1    0.1 1     INSTALLED NEW GREASE FITTING IN         930
                                                                  INTERMEDIATE PROP SHAFT INCIDENT 7, EPR
                                                                  FB-930

 PARTS 10H-25             GP=000080900 NO=01 LIFE=       FITTING LUBRICATION

 31/03/78   01086 045.0G U O O A   N N 1801        0.3    0.3 1     DRILLED AND INSTALLED COTTER PIN        255(S-3)
                                                                  TAILGATE BOLTS. THIS ACTION IS
                                                                  CONSIDERED A MODIFICATION TO THE
                                                                  EQUIPMENT EPR FB-255(S-3)

 31/03/78   01086 045.0H U O O A   N N 0613        0.2    0.2 1     REROUTED ELECTRICAL WIRE TO BACKUP      348(S-1)
                                                                  ALARM. EPR FB-348(S-1)

 31/03/78   01086 045.0I U C C A   N N 1801        0.1    0.1 1     TIGHTENED DROP LEG BOLTS EPR            869(S-1)
                                                                  FB-869(S-1)
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,937
 D        S OHR   A     T S F E T Q A C   G  CO     CH     MH     M OT                                             E
 A        H OON   C     A / C C M A M S   R  OL     LO     AO     E IT                                             P
 T        F OUD   T     S U H H *   T F   P  NY     OU     NU     N AM                                             R
 E        T HRS   N     K     R S            T      CR      R       GE                                             S
                                                    KS                        DESCRIPTION

19/08/77 2 154.1 001.0  S 0 0 A C N N 1001  00.0  00.8  00.8 1  00.0 ASSEMBLE AND INSTALL CAB HAUL FRAME

19/08/77 2 154.1 001.0A S 0 0 A C N N 1002  00.0  00.4  00.4 1  00.0 INSTALL WINDSHIELD & WIPER ASSEMBLY

19/08/77 2 154.1 001.0B S 0 0 A C N N 1001  00.0  00.5  01.0 2  00.0 INSTALL "ROPS" ON POWER SECTION

19/08/77 2 154.1 001.0C S 0 0 A C N N 2202  00.0  01.0  01.0 1  00.0 INSTALL TWO (2) REAR VIEW SIDE MIRRORS

22/08/77 2 154.1 001.0D U 0 0 A C N N 1203  00.0  00.3  00.3 1  00.0 ADJUST SERVICE BRAKE ON FRONT RIGHT       30
                                                                     WHEEL EPR FB-30

25/08/77 2 156.3 002.0  U 0 0 A C Y Y 1201  00.0  00.7  00.7 1  00.0 REPLACED DEFECTIVE PARKING BRAKE CABLE   47
                                                                     - EPR FB-47

PARTS 2546146           GP=000011201 NO=01 LIFE=UNK   PARKING BRAKE CABLE

27/08/77 1 164.3 003.0  U C C A C Y N 1311  00.0  00.4  00.4 1  00.0 CHECKED TIRE PRESSURE AND HAD TO ADD
                                                                     AIR TO BRING PRESSURE UP TO 55 PROJ.
                                                                     ALL TIRES WERE LOW

29/08/77 1 183.9 004.0  U C C A C N N 0000  00.0  00.1  00.1 1  00.0 ADDED TWO QTS ENGINE OIL.

30/08/77 1 191.1 005.0  U O O I C N N 0607  00.0  00.5  00.5 1  00.0 INSTALLED CAPACITOR ON HOUR METER TO      94
                                                                     PREVENT SPIKES WHICH COULD CAUSE THE
                                                                     METER TO GIVE INACCURATE HOUR READINGS.
                                                                     NOT SHOWN IN TM BECAUSE THIS ITEM ADDED
                                                                     TO IMPROVE ACCURACY OF HOUR METER
                                                                     DURING TESTING EPR FB-94

30/08/77 1 133.9 006.0  U F 0 A C Y Y 0710  00.0  01.3  01.3 1  00.2 (TRANSMISSION FAILED TO SHIFT INTO 1ST   49(17-1)
                                                                     GEAR) DIAGNOSED AN OPEN CICUTIT WITHIN
                                                                     1ST SOLENOID ON TRANSMISSION. REPLACED
                                                                     SOLENOID AND OPERATION OF 1ST, 2ND,
                                                                     3RD, + 4TH GEARS CHECKED OK DURING TEST
                                                                     DRIVE. (EPR FB-49(17-1)
CRITICALITY FACTOR= 1.00

PARTS 236402            GP=000010710 NO=01 LIFE=UNK   SOLENOID/ELECT. CONTROL VALVE ON TORQUE CO

31/08/77 1 200.2 007.0  S C C A C Y N 0000  00.0   0.8   1.6 2        PERFORMED 50 HOUR MAINTENANCE CHECK AS   1089
                                                                     REQUIRED BY LUBE ORDER. 1. CHECKED
                                                                     FLUID LEVEL IN MASTER CYLINDER. LEVEL
                                                                     OK 2. CHECKED FLUID LEVEL IN MIDMOUNT
                                                                     BEARING. LEVEL OK 3. CHECKED GREASE
                                                                     FITTINGS ON POWER SECTION. ALL APPEARED
                                                                     PROPERLY GREASED EPR FB-1089
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,937
 D         S OHR   A    T S E E T Q A C   G  CD     CH     MH     M DT                                          E
 A         H DON   C    A / C C M A M S   R  OL     LO     AO     E IT                                          P
 T         F OUD   T    S U H H '  T F    P  NY     OU     NU     N AM                                          R
 E         T HRS   N    K    R S             T      CR     R        GE                                          S
                                                    KS                    DESCRIPTION

01/09/77 1 218.5   7.1  U O O A C Y N 0000  00.0  00.2  00.2 1  00.1 ADDED 2 QUARTS OF ANTIFREEZE TO
                                                                   RADIATOR SURGE TANK.

02/09/77 1 226.0 008.0  U O O A C Y Y 0501  00.0  00.5  00.5 1  00.0 RETIGHTENED FITTING ON HOSE ASSEMBLY      67
                                                                   BETWEEN SURGE TANK AND ENGINE WATER
                                                                   PUMP ADDED 10 GAL COOLANT EPR FB-67
CRITICALITY FACTOR= 1.00

03/09/77 1 236.6 009.0  S C C A C N N 0000  00.0  00.1  00.1 1  00.0 ADDED 3 QTS OF COOLANT TO RADIATOR

03/09/77 2 248.2 010.0  U C C A C N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 QUART OF ENGINE OIL

06/09/77 1 248.2 010.0A S O O A C Y N 0000  00.0   4.2   7.5 2     250 HOUR SCHEDULED MAINTENANCE EPR       1090
                                                                   FB-1090

PARTS MS-35802-3          GP=000010106 NO=02 LIFE=       FILTER ELEMENT, OIL, FULL FLOW
      9311                   000010106    02             FILTER ELEMENT, OIL, BYPASS
      5678                   000010309    02             CARTRIDGE, FUEL FILTER
      LF-511                 000010721    01             FILTER ELEMENT, OIL, TRANSMISSION
      299080                 000010508    01             FILTER ELEMENT, WATER, CORROSION RESIST
      AC43887                000011202    01             FILTER ELEMENT, FL, POWER CLUSTER
      569022-03              000011100    01             VENT ASSY, BREATHER, AXLE
      569022-03              000010900    01             VENT ASSY, BREATHER, MDMT
      569020-03              000010700    01             VENT ASSY, BREATHER, TRANSMISSION

06/03/77 1 248.7 010.1  U O O I C Y N 1201  00.0  05.5  05.5 1  00.5 REPLACED PARKING BRAKE CABLE THIS         101
                                                                   PROCEDURE NOT IN MAC EPR FB-101

PARTS 2546146             GP=000011201 NO=01 LIFL=092.4 PARKING BRAKE CABLE

08/09/77 1 257.1 011.0  U C C A C N N 0000  00.0  00.1  00.1 1  00.0 ADDED 2 QTS OF COOLANT TO RADIATOR,

08/09/77 1 261.3 012.0  U O O A C Y N 0000  00.0  00.1  00.1 1  00.0 REINSTALLED WARNING DECAL CAME OFF        79
                                                                   DURING WASH DOWN EPR FB-79

10/09/77 1 282.0 013.0  U C C A C Y N 0900  00.0  00.4  00.4 1  00.1 TIGHTENED BOLTS ON SCRAPER DRIVE SHAFT    109
                                                                   GUARD. EPR FB-109

10/09/77 1 282.0 013.0A U O O A C Y N 0501         0.2   0.2 1     TIGHTENED BOLTS RETAINING SURGE TANK ON   1062
                                                                   COOLANT SYSTEM. EPR FB-1062
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,937
 D         S OHR    A     T S E E T Q A C   G  CD     CH     MH     M OT                                   E
 A         H DON    C     A / C C M A M S   R  OL     LO     AO     E IT                                   P
 T         F OUD    T     S U H H *   T F   P  NY     OU     NU     N AM                                   R
 E         T MPS    N     K     R S            T      CR     R        GE                                   S
                                                      KS                  DESCRIPTION

 10/09/77 1 282.0 013.0B U C C A C N N 0000  00.0  00.2  00.2 1  00.0 ADDED 1 QUART OF COOLANT TO BRING SURGE
                                                                      TANK UP TP PROPER LEVEL.

 10/09/77 1 282.0 013.0C U O O I C Y Y 0312  00.0  03.8  03.8 1  02.0 WORKED ON PROBLEM ASSOCIATED WITH        112
                                                                      ENGINE REMAINING AT HIGH IDLE RPM. EPR
                                                                      FB-112
CRITICALITY FACTOR= 1.00

 13/09/77 1 295.1 015.0  U C C A C N N 0000  00.0  00.1  00.1 1  00.0 ADDED ONE (1) QUART OF ENGINE OIL

 13/09/77 1 302.9 016.0  S C C A C Y N 0000  00.0  01.2  02.4 2  00.0 50 HOUR MAINTENANCE PWR SECT. MIDMOUNT   117
                                                                      3 SQUIRT OF OIL WK SECT. MIDMOUNT 8
                                                                      SQUIRTS OF OIL ADDED 300CC BRAKEFLUID
                                                                      TO POWER SECTION RESERVOIR WK SECT.
                                                                      BRAKE RESERVOIR OK. EPR FB-117

 16/09/77 2 341.8 017.0  U O O A M Y N 0000  00.0  00.1  00.1 1  00.0 RE-CEMENT DECAL WARNING NUT MUST BE      144
                                                                      SECURE PRIOR TO OPERATION.(MAC DOES NOT
                                                                      LIST A GROUP NUMBER FOR DECALS). EPR
                                                                      FB-144

 16/09/77 2 342.5 018.0  U O O A C Y Y 1414  00.0  01.3  02.6 2  00.2 EPR FB-145 INSTALL NEW STEERING VALVE    145
                                                                      OPERATOR HAD TO STOP DUE TO OIL OP HIS
                                                                      SHOE AND ON THE BRAKE + ACCELERATOR
                                                                      PEDALS
CRITICALITY FACTOR= 1.00

 PARTS 1-GB40011          GP=000011414 NO=01 LIFF=UNK   VALVE, STEERING

 16/09/77 2 342.5  18.0A S C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 1 GALLON OF HYDRAULIC OIL TO
                                                                      REPLACE LOSS, WHEN NEW STEERING PUMP
                                                                      WAS INSTALLED

 20/09/77 2 349.3 019.0  U O O A C N N 1414  00.0  01.3  02.6 2  00.0 INSTALL SECOND STEERING VALVE EPR        146(145-1)
                                                                      FB-146(145-1)

 PARTS 1-GB40011          GP=000011414 NO=01 LIFF=006.8 VALVE, STEERING

 21/09/77 2 353.0 020.0  U O O A C N N 1414  00.0  00.7  00.7 1  00.1 INSTALL KIT ON STEERING VALVE EPR        146(S-1)
                                                                      FB-146(S-1)

 PARTS 996330             GP=000011414 NO=01 LIFF=004.7 KIT REPAIR
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,937
 D        S OHR   A    T S E E T Q A C  G  CO    CH    MH    M OT                                        E
 A        H DON   C    A / C C H A M S  R  OL    LO    AO    E IT                                        P
 T        F OUD   T   /S U H H *   T F  P  NY    OU    NU    N AM                                        R
 E        T MRS   N    K     R S           T     CR    R       GE                                        S
                                                 KS                    DESCRIPTION

21/09/77 2 357.8 021.0  U O O A M Y Y 0609  00.0  00.3  00.3 1  00.0 ROADSIDE HEADLIGHT REPLACED. EPR FB-180  180

PARTS 1030286           GP=000010609 NO=01 LIFE=UNK   HEADLIGHT

22/09/77 1 361.6 022.0  U O O A M Y Y 1507  00.0  00.2  00.2 1  00.0 REPAIRED CURBSIDE DOLLY WHEEL BREAK      182
                                                                     WITH TEMPORARY NUT + BOLT FIX. EPR
                                                                     FB-182

22/09/77 1 361.9 022.0A U C C A M N N 2202         0.2   0.2 1       TIGHTENED SIDE VIEW MIRRORS. EPR        1063
                                                                     FB-1063

22/09/77 2 366.4 023.0  U O O A M Y N 0601  00.0  01.0  02.0 2  00.0 ADJUST + TIGHTEN ALTERNATOR BELTS THE    1064
                                                                     BELTS WERE LOOSE EPR FB-1064

22/09/77 2 366.4 023.0A U O O A M Y Y 0609  00.0  00.1  00.1 1  00.0 REPLACED SERVICE HEADLIGHT LEFT SIDE     165
                                                                     EPR FB-165

PARTS 1030286           GP=000010609 NO=01 LIFE=008.6 LAMP

22/09/77 2 367.2 024.0  U C C A M Y N 1507  00.0  00.2  00.2 1  00.0 RETIGHTEN THE DOLLY WHEEL RETAINING NUT  166
                                                                     + SECURED WITH COTTER PIN. EPR FB-166

22/09/77 2 367.2 024.0A U O O A M Y Y 0505  00.0  01.0  03.0 3  00.0 FAN BELTS WERE ADJUSTED BECAUSE THEY     183
                                                                     WERE TOO LOOSE (NOISE COULD BE HEARD
                                                                     OVER THE NOISE OF THE ENGINE) EPR
                                                                     FB-183

23/09/77 2 375.3 025.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 2 1/2 QUARTS OF OIL TO THE
                                                                     HYDRAULIC TANK

23/09/77 2 382.0 026.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 1 GALLON HYDRAULIC OIL TO TANK.

24/09/77 1 382.6  27.0  U O O I C N N 2407  00.0  00.5  00.5 1  00.0 INSTALL DOLLY WHEEL SHUT OFF VALVE. EPR  192
                                                                     FB-192

24/09/77 2 389.0 028.0  U O O A M Y N 1311  00.0  03.0  09.0 3  00.0 REPLACED LEFT REAR TIRE, A LARGE         167
                                                                     SECTION OF TREAD WAS TEARING LOOSE ON
                                                                     OLD TIRE INSTALLED NEW PREFORMED
                                                                     PACKING EPR FB-167
CRITICALITY FACTOR= 1.00

 PARTS 2507913          GP=000011311 NO=01 LIFE=      TIRE, PNEUMATIC
        811398             000011311    01            PACKING, PREFORMED
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,937
 D          S OHR   A    T S E E T Q A C    G  CD      CH      MH      M OT                              E
 A          H OON   C    A / C C M A M S    R  OL      LO      AO      E IT                              P
 T          F OUD   T    S U H H *   T F    P  NY      OU      NU      N AM                              R
 E          T HRS   N    K     R S             T       CR      R        GE                               S
                                                       KS                      DESCRIPTION

26/09/77 2 402.4 029.0  S C C A M Y N 0000  00.0   1.0   1.7 2      50 HOUR MAINTENANCE TO POWER UNIT        1045
                                                                  RFORMED A- DISCONNECT P.S + LOADER .4
                                                                   B-INSPECTED MATTER CYLINDER-LEVEL OK
                                                                  .1 HR C-INSPECTED  BEARINGS .2
                                                                  HR D- NECT P.S. + DER .1 HR EPR
                                                                  FB 45

26/09/77 2 402.4 029.0A U C C A M Y N 1801  00.0  00.2  00.2 1  00.0 HTEN 3 BOLTS + NU RING HOOD             166
                                                                  HATC BOLTS + NUTS WERE OSE EPR
                                                                  FB-

26/09/77 2 407.3 030.0  U O O A M N N 1802  00.0  00.6  00.6 1  00.0 F MOVE, REAR                             04
                                                                  LI HT GUARD PR B-204

28/09/77 2 429.9 031.0  U O O A M Y Y 1208  00.0  00.5  00.5 1  00.0 REM ALVE, CLEAN +                       217
                                                                  RE-IV FB-

28/09/77 2 429.9 031.0A U C C A M N N 0000  00.0  00.3  00.3 1  00.0 4 QTS OF OIL ADDED TO T
28/09/77 2 433.0 032.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 1 GALLON TRANSMISSION OIL
29/09/77 2 450.3 033.0  U O O A M N N 0000  00.0  02.0  02.0 2  00.0 LOADER CAPSIZED WHILE PIT DOZING AND      226
                                                                  HAD TO BE UPRIGHTED AND CHECKED OVER.
                                                                  EPR FB-226

30/09/77 1 450.3  33.1  S C C A M Y N 0000         0.4   0.8 2      PERFORMED 50 HOUR SERVICE. EPR FB-1047   1047

30/09/77 1 450.3  33.1A U O O I M Y Y 0000         0.9   1.8 2      DIFFICULTY UNCOUPLING. CLARK REP         1047
                                                                  CHECKED PRESSURES-OK. EPR FB-1047

03/10/77 2 454.8 033.2  S C C A M N N 0000  00.0  00.5  00.5 1  00.0 TIGHTENED BOLTS ON FUEL TANK, SURGE        352
                                                                  TANK AND WATER HOSE CLAMP.EPR FB-352

03/10/77 2 456.7 034.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 2 QUARTS OF ENGINE OIL

04/10/77 1 458.7 034.1  U O O A M Y Y 0601  00.0  00.2  00.2 1  00.0 ADJUSTED ALTERNATOR BELT - EPR FB-353     353
CRITICALITY FACTOR= 1.00

05/10/77 2 467.4 035.0  U O O A M Y Y 1203  00.0  00.8  00.8 1  00.0 ADJUST SERVICE BRAKES EPR FB-1065        1065
CRITICALITY FACTOR= 1.00
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,937
 D          S OHR   A    T S E E T Q A C   G  CD    CH     MH     M OT                                           E
 A          H DON   C    A / C C M A M S   R  OL    LO     AO     E IT                                           P
 T          F OUD   T    S U H H *   T F   P  NY    OU     NU     N AM                                           R
 E          T MPS   N    K     R S            T     CR     R        GE                                           S
                                                    KS                      DESCRIPTION
------------------------------------------------------------------------------------------------------------------

 06/10/77 2 476.4 036.0  U O O A M Y Y 0106  00.0  01.8  01.8 1  00.0 THE NUT + WASHER (ON THE OIL FILLER       233
                                                                   CAP) FELL THROUGH INTO THE CYLINDER
                                                                   HEAD COVER. THE CYLINDER HEAD COVER HAD
                                                                   TO BE REMOVED TO GET THE NUT + WASHER.
                                                                   THE CYLINDER HEAD COVER WAS
                                                                   RE-INSTALLED. THE OIL FILLER CAP WAS
                                                                   THEN RE-ASSEMBLED. THE THREADED END WAS
                                                                   DISTORTED SO THE NUT COULD NOT COME OFF
                                                                   AGAIN EPR FB-233
CRITICALITY FACTOR= 1.00
------------------------------------------------------------------------------------------------------------------
 08/10/77 2 500.0 037.0  S O O A M Y N 0000  00.0  04.6  09.6 2  00.0 500 HOUR SCHEDULED MAINTENANCE EPR       1046
                                                                   FB-1046

 PARTS MS-35802-3           GP=000010106 NO=02 LIFE=251.8 FILTER ELEMENT, OIL, FULL FLOW
       9311                    000010106    02      251.8 FILTER ELEMENT, OIL, BYPASS
       5678                    000010309    02      251.8 CARTRIDGE, FUEL FILTER
       LF-511                  000010721    01      251.8 FILTER ELEMENT, OIL, TRANSMISSION
       299080                  000010508    01      251.8 FILTER ELEMENT, WATER, CORROSION RESIST
       AC43887                 000011202    01      251.8 FILTER ELEMENT, FL, POWER CLUSTER
       569022-03               000011190    01      251.8 VENT ASSY, BREATHER, AXLE
       569022-03               000010900    01      251.8 VENT ASSY, BREATHER, MDMT
       569020-03               000010700    01      251.8 VENT ASSY, BREATHER, TRANSMISSION
       1911724                              01      UNK   FILTER, AIR (INSIDE)
       P11-7437                             01      UNK   FILTER, AIR (OUTSIDE)

 13/10/77 1 518.6 038.0  U O C I M N N 2201  00.0  00.2  00.4 2  00.0 INSTALLED CANVAS CAB ASSEMBLY. (TM
                                                                   DEP5- -201-20+P INADEQUATE - TM STATES
                                                                   THE PERTINENT CANVAS CAB ILLUSTRATIONS
                                                                   FIG 2-17C, PAGE 2-90C + FIG. 132, PAGE
                                                                   C-172 SHALL BE SUPPLIED LATER.)

 PARTS 2546395              GP=000012201 NO=01 LIFE=00000 CAB ENCLOSURE - SOFT
------------------------------------------------------------------------------------------------------------------
 13/10/77 2 518.6 038.0A U O O A C Y Y 0312  00.0  02.0  04.0 2  00.0 REPLACED THROTTLE LINKAGE BALL JOINT      250
                                                                   R.H. EPR FB-250
CRITICALITY FACTOR= 1.00

 PARTS 1301361              GP=000010312 NO=01 LIFE=UNK   BALL JOINT, THROTTLE
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,937
 D         S OHR   A    T S E E T Q A C   G  CD    CH    MH    M UT                               E
 A         H OON   C    A / C C M A M S   R  OL    LO    AO    E IT                               P
 T         F OUD   T    S U H H '   T F   P  NY    OU    NU    N AM                               R
 E         T MRS   N    K     R S            T     CR    R       GE                               S
                                                   KS                  DESCRIPTION

 13/10/77 2 522.8 039.0  U C C A   N N 0000  00.0  00.2  00.2 1  00.0 ADDED 2 GALLON OF HYDRAULIC OIL

 15/10/77 1 536.9 039.1  U O O A M Y Y 1209  00.0  00.5  01.0 2  00.0 ADJUSTED AIR PRESSURE SETTING ON       356
                                                                    REGULATOR VALVE UTILIZING AIR PRESSURE
                                                                    GAGE IN CAB. AIR PRESSJRE WAS LOW
                                                                    ACCORDING TO THE GAUGE, EPR FB-356
CRITICALITY FACTOR= 1.00

 15/10/77 1 540.7 039.2  U C C A M Y N 0312  00.0  00.1  00.1 1  00.1 REMOVED SMALL ROCK LOCATED UNDER        357
                                                                    ACCELERATOR PEDAL. ACCELERATOR BECAME
                                                                    STUCK IN HIGH THROTTLE DURING PIT
                                                                    EXCAVATION OPERATION. EPR FB-357

 15/10/77 2 547.1 040.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 4 QUARTS OF HYDRAULIC OIL

 17/10/77 1 553.3 041.0  U O O A M Y Y 0710  00.0  00.3  00.3 1  00.0 REINSTALLED ROD END SUPPORT, ?ITEM 22,  358
                                                                    FIG. 136, PB330, DEP5- -201-348P# ON
                                                                    THE TRANSMISSION DISCONNECT LEVER WITH
                                                                    A NEW HEXAGON NUT. EPR FB-358

 PARTS 8D-8H            GP=000010710 NO=01 LIFF=UNK   NUT, PLAIN, HEXAGON, PHOS CTG, 1/2-20 UNF

 18/10/77 1 560.1 042.0  S C C A M Y N 0000  00.0  00.7  00.7 1  00.0 PERFORMED 50 HR MAINTENANCE PER LUBE   360
                                                                    ORDER L05-3840-201-12 MASTER CYLINDER
                                                                    WAS FOUND DRY. REFILLED MASTER CYLINDER
                                                                    WITH 1/2PT OF BRAKE FLUID. BOTH
                                                                    UNCOUPLING AND COUPLING OPERATION
                                                                    REQUIRED 20 MINUTES FOR 2 MEN. EPR
                                                                    FB-360

 19/10/77 1 569.0 043.0  U C C A M Y N 0000  00.0  00.1  00.1 0  0.0  ADDED 4 FL. OZ OF BRAKE FLUID TO MASTER
                                                                    CYLINDER.

 19/10/77 1 570.3 044.0  U O O A C Y Y 0312  00.0  01.2  02.2 2  01.4 ADJUSTED ACCELERATOR AIR VALVE,        361
                                                                    TIGHTENED NUT ON THROTTLE LINKAGE,
                                                                    BROUGHT RPMUP TO SPEC. (2500) EPR
                                                                    FB-361
CRITICALITY FACTOR= 1.00

 19/10/77 2 572.2 045.0  U C C I M Y N 2201  00.0  00.1  00.1 1  00.0 CAB DOOR WAS REMOVED + PLACED IN       362
                                                                    STORAGE EPR FB-362
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,937
 D         S OHR   A    T S E E T Q A C   G  CO    CH    MH    M DT                                          E
 A         H DON   C    A / C C M A M S   R  OL    LO    AO    E IT                                          P
 T         F OUD   T    S U H H '   T F   P  NY    OU    NU    N AM                                          R
 E         T HRS   N    K   R S              T     CR    R       GE                                          S
                                                   KS                   DESCRIPTION
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 20/10/77 1 577.9 046.0  U C C A M N N 0501  00.0  00.2  00.2 1  00.0 RETIGHTENED SURGE TANK MOUNTING BOLTS.   364
                                                                    EPR FB-364

 21/10/77 1 590.7 047.0  U O O I C Y Y 0300  00.0  04.8  04.8 1  02.2 CLEANED INTAKE AIR CLEANER W/COMPRESSED  367
                                                                    AIR REPLACED SECONDARY FUEL FILTERS-ONE
                                                                    SLIGHTLY CLOGGED CHECKED PRIMARY FUEL
                                                                    FILTER-OK CHECKED THROTTLE LINKAGE
                                                                    WELDED SURGE TANK MOUNTING BRACKET +
                                                                    REINSTALLED EPR FB-367
CRITICALITY FACTOR= 1.00

 PARTS 5678               GP=000010309 NO=02 LIFE=090.7 FUEL FILTER, SECONDARY

 26/10/77 2 623.4  47.1  S C C A M Y N 0000         0.4   1.0 3       50 HOUR SERVICE. EPR FB-1050           1050

 26/10/77 2 623.4  47.1A U O O I M Y Y 0000         0.5   1.5 3       DIFFICULTY UNCOUPLING. EPR FB-1050     1050

 27/10/77 1 627.7 047.2  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 4QTS OF ENGINE OIL

 27/10/77 2 627.7 048.0  U O O A M Y Y 0607  00.0  00.5  00.5 1  00.4 REPAIRED WIRE FROM HOUR METER TO         369.
                                                                    PRESSURE SWITCH. EPR FB-369.

 01/11/77 2 627.7 048.0A U O F A C Y Y 1209  00.0  04.5  09.0 2  00.0 INSTALL NEW AIR COMPRESSOR EPR FB-384    384

 PARTS AR-45749           GP=000011209 NO=01 LIFE=UNK   AIR COMPRESSOR
CRITICALITY FACTOR= 1.00

 27/10/77 2 627.7 048.0B U O O A M Y Y 0601  00.0  02.0  02.0 1  00.0 REPLACED ALTERNATOR BELTS EPR FB-353     353
CRITICALITY FACTOR= 1.00

 PARTS 217695             GP=000010601 NO=02 LIFE=458.7 BELT, ALTERNATOR(REPLACE IN SETS)

 02/11/77 2 631.4 049.0  U O O A M Y Y 1208  00.0  00.2  00.4 1  00.2 TIGHTENED BOLTS HOLDING DRAIN VALVE TO   371
                                                                    AIR RESERVOIR EPR FB-371

 03/11/77 1 634.6 050.0  U O O I M Y N 1208  00.0  00.5  00.5 1  00.2 REPLACED AUTOMATIC DRAIN VALVE ON AIR    373
                                                                    SUPPLY TANK SOLDERED ELECTRICAL
                                                                    CONNECTIONS ON NEW VALVE. EPR FB-373

 PARTS 2549864            GP=000011208 NO=01 LIFE=UNK   AUTOMATIC DRAIN VALVE (THERMO-EXPELLO) AIR RESERVOIR SUPPLY
                                                              TANK
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,937
 D          S OHR   A     T S E E T Q A C    G  CD     CH     MH     M OT                                        E
 A          H DON   C     A / C C M A M S    R  OL     LO     AO     E IT                                        P
 T          F OUO   T     S U H H '   T F    P  NY     OU     NU     N AM                                        R
 E          T MRS   N     K     R S             T      CR     R       GE                                         S
                                                       KS                     DESCRIPTION

03/11/77 2 635.3 051.0  U O O A M Y N 1311  00.0  02.8  05.6 2  00.0 REPLACED DEFECTIVE TIRE (A 5" X 10"         385
                                                                     SECTION OF TREAD HAD BEEN TORN OFF OLD
                                                                     L.F. TIRE EPR FB-385

PARTS 2507913            GP=000011311 NO=01 LIFE=UNK    TIRE, PNEUMATIC

05/11/77 1 656.1 052.0  S C C A M Y N 0000  00.0  01.4  02.8 2  00.0 PERFORMED 50HR MAINTENANCE PER LUBE         374
                                                                     ORDER L05-3840-201-12. ADDED 1/2 PINT
                                                                     OF BRAKE FLUID TO THE MASTER CYLINDER.
                                                                     EPR FB-374

07/11/77 1 666.3 052.1  U C C A M Y N 0609  00.0  00.1  00.1 1  00.0 REPLACED LAMP IN CURBSIDE COMPOSITE         375(S-1)
                                                                     REAR LIGHT EPR FB-375(S-1)

PARTS MS35478-1683       GP=000010609 NO=01 LIFE=       LAMP, INCANDESCENT

08/11/77 1 685.6 053.0  U C C A M Y N 0721  00.0  00.8  00.8 1  00.2 TIGHTENED HOSE FITTINGS ON TRANSMISSION     378
                                                                     HOSE TO COOLER. FILTER AND RETURN LINE
                                                                     FROM COOLER TO TRANSMISSION INPUT.
                                                                     TIGHTENED ALL FITTINGS, PROBLEM
                                                                     CORRECTED. EPR FB-378

09/11/77 1 685.6 053.0A U O O A M Y Y 0106  00.0  00.5  00.5 1  00.0 REMOVED OIL PRESSURE SENDING UNIT AND       379
                                                                     APPLIED SEALING COMPOUND ON THREADS OF
                                                                     CONNECTION WITH SENDER BRACKET.
                                                                     REINSTALLED EPR FB-379

09/11/77 1 691.0 054.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 1 GALLON OE-10 TO HYDRAULIC
                                                                     RESERVOIR

09/11/77 2 698.4 055.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 1 GALLON OF ENGINE OIL

10/11/77 1 706.0 056.0  S C C A M Y N 0000  00.0  00.6  01.2 2  00.0 50 MAINTENANCE ADDED 10 ML OF LUBRICANT     380
                                                                     TO P.S. MIDMOUNT ADDED 4 OZ OF BRAKE
                                                                     FLUID TO MASTER CYLINDER RESERVOIR EPR
                                                                     FB-380

11/11/77 1 719.9 057.0  U C C A M Y N 0609  00.0  00.2  00.2 1  00.0 SERVICE HEADLIGHT OUT REPLACED LAMP,        381
                                                                     SEAL BEAM EPR FB-381

PARTS 4880               GP=000001609 NO=01 LIFE=       LAMP, SEAL BEAM CURBSIDE SERVICE HEADLIGHT
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,937
 D          S OHR   A    T S E E T Q A C   G  CD     CH     MH     M DT                                          E
 A          H DON   C    A / C C M A M S   R  OL     LO     AO     E IT                                          P
 T          F OUD   T    S U H H *   T F   F  NY     OU     NU     N AM                                          R
 E          T MRS   N    K     R S             T     CR      R       GE                                          S
                                                     KS                         DESCRIPTION

14/11/77 1 743.8 058.0  U O O A M Y N 0106  00.0  00.5  00.5 1  00.3 ENGINE OIL PRESSURE GAGE INDICATING LOW  389
                                                                      OIL PRESSURE. ENGINE OIL PRESSURE
                                                                      SENDER FAULTY, REPLACED SENDING UNIT,
                                                                      GAGE READING NORMAL. EPR FB-389

PARTS 5654912               GP=000010106 NO=01 LIFE=UNK   SENDER PRESSURE-ENGINE OIL LOCATED ON ENGINE MTD ON SWITCH
                                                              AND SENDER BRACKET

15/11/77 2 758.1 059.0  U O O A M Y Y 0607  00.0  01.4  02.3 1  00.9 REPLACED DEFECTIVE RELAY IN REVERSE      390
                                                                      CIRCUIT EPR FB-390
CRITICALITY FACTOR= 1.00

PARTS A508494               GP=000010607 NO=01 LIFE=UNK   RELAY

16/11/77 1 758.2 060.0  S O O A M Y N 0000  00.0  04.7  04.7 1  00.0 250 HR. MAINTENANCE 15 ML LUBRICANT      391
                                                                      ADDED TO MIDMOUNT 26 QTS OE-30 ENGINE
                                                                      CRANKCASE EPR FB-391

PARTS MS-35802-3            GP=000010106 NO=02 LIFE=258.4 FILTER ELEMENT, OIL, FULL FLOW
      9311                     000010106    02       258.4 FILTER ELEMENT, OIL, BYPASS
      5678                     000010309    02       167.5 CARTRIDGE, FUEL FILTER
      35070                    000010309    01             CARTRIDGE, FUEL FILTER
      LF-511                   000010721    01       258.4 FILTER ELEMENT, OIL, TRANSMISSION
      299080                   000010508    01       258.4 FILTER ELEMENT, WATER, CORROSION RESIST
      AC43887                  000011202    01       258.4 FILTER ELEMENT, FL, POWER CLUSTER
      569022-03                000011100    01       258.4 VENT ASSY, BREATHER, AXLE
      569022-03                000010900    01       258.4 VENT ASSY, BREATHER, MDMT
      569020-03                000010700    01       258.4 VENT ASSY, BREATHER, TRANSMISSION

18/11/77 1 780.0 061.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.1 ADDED 2 QT OE-30 OIL TO ENGINE SUMP

21/11/77 1 808.2 062.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.1 ADDED 2 GAL OE-10 TO HYDRAULIC
                                                                      RESERVOIR

21/11/77 1 808.2 062.0A S C C A M N N 0305  00.0  00.1  00.1 1  00.1 TIGHTENED BOLTS ON THE TURBO CHARGER     393
                                                                      "V" BAND CLAMP. EPR FB-393

21/11/77 1 808.3 063.0  U C C A M N N 0508  00.0  00.1  0091 1  00.1 TIGHTENED CLAMP ON HOSE FROM THE INLET   668
                                                                      OF FILTER HEAD ON CORROSION RESISTOR
                                                                      FILTER, TO SHUT OFF VALVE AT VALVE END
                                                                      TO STOP LEAK. EPR FB-668
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,937 .
 D         S OHR   A     T S E E T Q A C   G  CO     CH     MH    M OT                                  E
 A         H OON   C     A / C C M A M S   R  OL     LO     AO    E IT                                  P
 T         F OUD   T     S U H H *   T F   P  NY     OU     NU    N AM                                  R
 E         T MRS   N     K     R S            T      CR      R     GE                                   S
                                                     KS                   DESCRIPTION

 21/11/77 1 810.2 064.0  U O O A M Y Y 1410  00.0  00.3  00.3 1  00.2 ADJUSTED VARIABLE DISPLACEMENT PUMP      669
                                                                      PRESSURE FROM 2350 TO 2500 PSI AS
                                                                      RECOMENDED BY TM. EPR FB-669
CRITICALITY FACTOR= 1.00

 22/11/77 1 819.6 064.1  S C C A M Y N 0000  00.0  00.8  01.9 3  00.0 PERFORMED 50 HR MAINTENANCE PER LUBE     670
                                                                      ORDER L05-3840-201-12 DURING
                                                                      PERFORMANCE OF THE 50 HR MAINTENANCE 17
                                                                      ML OD HEAVY DUTY ENGINE OIL WAS ADDED
                                                                      TO THE MIDMOUNT BEARING. REMOVED DIRT
                                                                      AND MUD FROM COUPLER SECTION GREASED
                                                                      FITTINGS ACCORDING TO THE LUBE ORDER
                                                                      CHECKED MASTER CYLINDER AND FOUND IT
                                                                      HAD THE REQUIRED AMOUNT OF BRAKE FLUID
                                                                      EPR FB-670

 28/11/77 2 829.6 065.0  U O O A M Y N 1507  00.0  02.0  02.0 1  00.0 WELDED A NEW UPPER DOLLY CYLINDER        182(S-1)
                                                                      SUPPORT BRACKET TO FRAME ASSY. EPR
                                                                      FB-182(S-1)

 PARTS 2546346           GP=000011507 NO=01 LIFE=       SUPPORT, DOLLY CYLINDER,CURBSIDE

 28/11/77 2 829.6 065.0A U O O A M Y N 2407  00.0  02.1  02.1 1  00.0 INSTALLED A NEW LUBRICATION FITTING,     182(S-2)
                                                                      BUSHING, ANCHOR PIN AND LOCKPLATE IN
                                                                      TOP OF DOLLY CYLINDER STRAIGHTENED EYE
                                                                      ON TOP OF DOLLY CYLINDER, CURBSIDE. EPR
                                                                      FB-182(S-2)

 PARTS MS15001-1         GP=000012407 NO=01 LIFE=UNK    LUBRICATION FITTING, TOP OF DOLLY CYLINDER
       2503282              000012407    01       UNK    LOCKPLATE
       2503283              000012407    01       UNK    PIN, STRAIGHT, ANCHOR
       2549322              000012407    01       UNK    BUSHING, SELF ALLIGN.

 28/11/77 2 829.6 065.0B U O O A M N N 0000  00.0  01.1  01.1 1  00.0 CLEANED ACID, FROM BATTERY BOX AND       671(S-1)
                                                                      BATTERIES, SPILLED DURING ACCIDENT
                                                                      REPLACED CURBSIDE SERVICE HEADLIGHT
                                                                      RETAINER AND LAMP SHELL STRAIGHTED
                                                                      CURBSIDE SERVICE LIGHT BRACKET EPR
                                                                      FB-671(S-1)

 PARTS 22670             GP=000010609 NO=01 LIFE=UNK    SHELL, LAMP
       5133                 000010609    01       UNK    RETAINER, LAMP
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,917
 D          S OHR   A     T S E E T Q A C   G  CD      CH      MH     M DT                                              E
 A          H OON   C     A / C C M A M S   R  OL      LO      AO     E IT                                              P
 T          F OUD   T     S U H H *   T F   P  NY      OU      NU     N AM                                              R
 E          T MRS   N     K     R S            T       CR      R        GE                                              S
                                                       KS                         DESCRIPTION

28/11/77 2 829.6 065.0C U C C A M N N 0000  00.0  00.2  00.2 1  00.0 REPLACED 3 GAL. OF ENGINE OIL LOST        671(S-1)
                                                                       DURING ACCIDENT EPR FB-671(S-1)

29/11/77 2 830.1 066.0  U O O A C Y Y 1501  00.0  00.5  00.5 1  00.0 INSTALLED MODIFIED TOP FUEL TANK          672
                                                                       BRACKET SUPPLIED BY CLARK EQUIP. CO. (8
                                                                       X 2 1/2 X 3/4 ANGLE STEEL) EPR FB-672

02/12/77 1 851.0 067.0  U O O A M Y Y 1208  00.0  00.9  00.9 1  00.1 REPLACED DAMAGED VALVE EPR FB-673(S-1)    673(S-1)

PARTS AF77875              GP=000011208 NO=01 LIFE= UNK  VALVE, EMERGENCY RELAY QUICK RELEASE AIR BRAKE POWER
                                                               CLUSTER

03/12/77 2 852.0 068.0  U O O A C Y Y 1501  00.0  02.0  06.0 3  00.8 STRAIGHTENED AND REWELDED FUEL TANK       674
                                                                       MOUNTING BRACKETS (LOWER FRONT +
                                                                       OUTSIDE) STRAIGHTENED SIDE PANELS EPR
                                                                       FB-674

06/12/77 1 865.4 069.0  U O O A M Y Y 1208  00.0  00.5  00.5 1  00.0 TIGHTENED FITTING ON EMERGENCY RELAY      676
                                                                       RELEASE VALVE EPR FB-676

06/12/77 1 865.4 069.0A U C C A M Y N 0306  00.0  00.1  00.1 1  00.0 TIGHTENED TOP MOUNTING BOLT ON FUEL       677
                                                                       TANK EPR FB-677

08/12/77 1 877.3 070.0  U O O A M Y Y 1208  00.0  00.7  00.7 1  00.2 REMOVED PULL TYPE AIR CYLINDER,           599
                                                                       THROTTLE LOCK OUT SYTEM - REMOVED ICE
                                                                       AND CLEANED CYLINDER, REINSTALLED
                                                                       CYLINDER PART 2548982 EPR FB-599

08/12/77 1 877.3 070.0A U O C A M N N 0309  00.0  00.5  00.5 1  00.1 REMOVED FUEL FILTER ASSEMBLY CLEANED      600
                                                                       REINSTALLED FILTER ASSEMBLY EPR FB-600

08/12/77 2 884.8 071.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 2 GALLONS OF HYDRAULIC OIL

10/12/77 1 887.8 072.0  U O O A M N N 1208  00.0  00.6  00.6 1  00.1 REPLACED PIPE REDUCER AND REINSTALLED     525
                                                                       ORIGINAL ROAD SIDE RESERVOIR, AUTOMATIC
                                                                       DRAIN VALVE. EPR FB-525

PARTS 19F-5                GP=000011208 NO=01 LIFE= UNK  PIPE REDUCER, ROADSIDE AIR RESERVOIR

12/12/77 1 887.9 073.0  U C C A M N N 0306  00.0  01.0  01.0 1  00.1 VEHICLE WOULD NOT START, NO FUEL IN       578
                                                                       PRIMARY FILTER. PROBABLE CAUSE ICE IN
                                                                       THE FUEL SYSTEM. VEHICLE ALLOWED TO SET
                                                                       UNTIL AMBIENT TEMPERTURE CLIMBED ABOVE
                                                                       FREEZING EPR FB-578
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,937
 D         S OHR   A     T S E E T Q A C   G  CD    CH    MH    M DT                              E
 A         H DON   C     A / C C M A M S   R  OL    LO    AO    E IT                              P
 T         F OUD   T     S U H H '   T F   P  NY    OU    NU    N AM                              R
 E         T HRS   N     K     R S            T     CR     R     GE                               S
                                                    KS                 DESCRIPTION

12/12/77 1 887.9 073.0A U C C A M N N 1208  00.0  00.3  00.3 1  00.3 HORN ON WITHOUT BEING ACTUATED          571
                                                                   MAINTENANCE PERSONNEL CHECKED THE
                                                                   SYSTEM PROBLEM CORRECTED WITHOUT ANY
                                                                   MAINTENANCE ACTION. ICE IN AIR HORN
                                                                   VALVE, PREVENTING FROM CUTTING OFF. EPR
                                                                   FB-571

14/12/77 1 888.6 074.0  U O O A M Y Y 0607  00.0  00.1  00.2 1  00.1 TIGHTENED WIRE ON COOLANT LEVEL         510
                                                                   INDICATOR EPR FB-510

14/12/77 1 893.9 075.0  S C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 6 GALLONS ANTIFREEZE TO COOLANT
                                                                   SYSTEM

16/12/77 1 901.2 076.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.1 ADDED 2 GAL. OE-10 TO TRANSMISSION
                                                                   RESERVIOR

16/12/77 1 901.3 077.0  S C C A M Y N 0000  00.0  01.1  02.2 2  00.0 50 HR MAINTENANCE DOLLY WHEEL ACTUATION 454
                                                                   CABLE FAILED UNABLE TO LOWER DOLLY
                                                                   WHEEL, UNABLE TO UNCOUPLE AND CHECK
                                                                   MIDMOUNT BEARING REPLACEMENT PART NOT
                                                                   AVAILABLE EPR FB-454

16/12/77 2 903.3 078.0  U O O A M Y Y 0505  00.0  00.5  00.5 1  00.0 ADJUSTED FAN RING EPR FB-461            461

16/12/77 2 905.9 079.0  U O O A C N N 2407  00.0  01.0  01.3 2  00.0 REPLACED CURBSIDE DOLLY CYLINDER        462
                                                                   REPAIRED HYDRAULIC HOSE CONNECTION AT
                                                                   DOLLY CYLINDER EPR FB-462

PARTS 2508337              GP=000012407 NO=01 LIFE=UNK   CYLINDER, ASSEMBLY

16/12/77 2 905.9 079.1  U O D A C Y N 1208  00.0  00.1  00.1 1  00.0 REPLACED FITTING IN AIR MANIFOLD EPR    462
                                                                   FB-462

PARTS 2404-6               GP=000011208 NO=01 LIFE=UNK   COUPLING,TIBE

21/12/78 2 917.7 080.0  U F O A M Y Y 2403  00.0  02.5  03.5 2  00.0 REPLACE RIGHT HAND DOLLY WHEEL CONTROL  459(S-1).
                                                                   CABLE ASSEMBLY EPR FB-459(S-1).
CRITICALITY FACTOR= 1.00

PARTS C81295-3             GP=000012403 NO=01 LIFE=UNK   CONTROL CABLE ASSEMBLY
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,937
 D          S OHR    A     T S E E T Q A C    G  CD      CH      MH     M DT                                          E
 A          H DON    C     A / C C M A M S    R  OL      LO      AO     E IT                                          P
 T          F OUO    T     S U H H *   T F    P  NY      OU      NU     N AM                                          R
 E          T MRS    N     K     R S            T        CR      R        GE                                           S
                                                         KS                      DESCRIPTION

 07/01/78 2 950.7 081.0  U F F A C N N 1802  00.0  03.1  06.2 2  00.0 REPAIRED AND STRAIGHTENED FENDER +         507
                                                                      ENGINE S DE PANELS. STRAIGHTENED FUEL
                                                                      TANK MOUNTING BRACKETS EPR FB-507

 10/01/78 1 954.9 082.0  S C C A M Y N 0000  00.0  00.8  01.1 2  00.0 PERFORMED 50 HOUR MAINTENANCE EPR           530
                                                                      FB-530

 12/01/78 1 963.2 083.0  U O O A M N N 0300  00.0  03.2  06.4 2  00.5 DRAIN CONTAMINATED FUEL FROM FUEL TANK,     549
                                                                      FUEL LINES, AND FUEL FILTERS. EPR
                                                                      FB-549

 12/01/78 1 963.2 083.0A U O O A M N N 0612  00.0  00.5  00.5 1  00.0 REPLACED POSITIVE BATTERY CLAMP, EPR         570
                                                                      FB-570

 PARTS 5292849            GP=000010612 NO=01 LIFE= UNK  CLAMP, ELECTRICAL, POSITIVE BATTERY BOX

 12/01/78 2 963.4 084.0  U O O A M Y Y 0613  00.0  16.6  28.8 2  09.0 TROUBLE SHOOTING TRYING TO FIND CAUSE       550
                                                                      OF VEHICLE ONLY MOVING IN 3RD GEAR- 2
                                                                      BROKEN WIRES WERE FOUND IN THE
                                                                      ELECTRICAL WIRING HARNESS. THESE WERE
                                                                      REPAIRED AND THE PROBLEM WAS CORRECTED
                                                                      EPR FB-550
CRITICALITY FACTOR= 1.00

 19/01/78 1 975.3 085.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 1 GALLON OF ANTI-FREEZE

 21/01/78 1 981.3 086.0  U F F I C Y Y 1414  00.0  00.7  00.7 1  00.0 REPLACED PACKING AND BACK-UP RING ON        566(S-1)
                                                                      ROTARY MANIFOLD SPOOL VALVE EPR
                                                                      FB-566(S-1)
CRITICALITY FACTOR= 1..0

 PARTS UNK                GP=000011414 NO=01 LIFE=       PACKING
       UNK                   000011414    01             PACKING
       UNK                   000011414    01             RING, BACK-UP

 21/01/78 2 988.8 087.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 2 QUARTS OF HYDRAULIC OIL

 23/01/78 1 990.6 088.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 3 GALLONS ANTIFREEZE

 23/01/78 1 990.6 088.0A U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GALLON ENGINE OIL
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,937
 D         S OHR   A     T S E E T Q A C   G  CD    CH     MH     M DT                                              E
 A         H DON   C     A / C C M A M S   R  OL    LO     AO     E IT                                              P
 T         F OUD   T     S U H H *   T F   P  NY    OU     NU     N AM                                              R
 E         T MRS   N     K     R S             T    CR      R      GE                                               S
                                                    KS                       DESCRIPTION

23/01/78 2 994.7 089.0  U O O A M Y Y 0608  00.0  00.8  00.8 1  00.0 REPLACED BROKEN FORWARD AND REVERSE          588
                                                                     ELECTRIC CONTROL SWITCH ROD. EPR F3-588

PARTS 2546584          GP=000010608 NO=01 LIFE=UNK   SWITCH, ELECT. CONTROL

24/01/78 1 01000 090.0  U O O A M Y Y 1208  00.0  00.3  00.3 1  00.2 REPLACED AUTOMATIC DRAIN VALVE ON            602
                                                                     CURBSIDE AIR RESERVOIR EPR FB-602

PARTS 281923           GP=000011208 NO=01 LIFE=112.5 VALVE, DRAIN

25/01/78 1 01000 091.0  U C C A M Y N 0609  00.0  00.2  00.2 1  00.0 REPLACED BURNED OUT LAMP IN ROADSIDE         603
                                                                     TAILLIGHT. EPR F3-603

PARTS MS35478-1683     GP=000010609 NO=01 LIFE=      LAMP, INCANDESCANT, ROADSIDE TAILLIGHT

25/01/78 1 01001 092.0  S O O A M Y N 0000  00.0  07.6  16.5 4  00.0 PERFORMED 1000 HOUR MAINTENANCE EPR          611
                                                                     FB-611

PARTS MS-35802-3       GP=000010106 NO=02 LIFE=242.8 FILTER ELEMENT, OIL, FULL FLOW
      9311               000010106    02      242.8 FILTER ELEMENT, OIL, BYPASS
      5678               000010309    02      242.8 CARTRIDGE, FUEL FILTER
      LF-511             000010721    01      242.8 FILTER ELEMENT, OIL, TRANSMISSION
      299080             000010508    01      242.8 FILTER ELEMENT, WATER, CORROSION RESIST
      AC43887            000011202    01      242.8 FILTER ELEMENT, FL, POWER CLUSTER
      569022-03          000011100    01      242.8 VENT ASSY, BREATHER, AXLE
      569022-03          000010900    01      242.8 VENT ASSY, BREATHER, MDMT
      569020-03          000010700    01      242.8 VENT ASSY, BREATHER, TRANSMISSION
      HC8300             000012408    01            FILTER ELEMENT HYDRAULIC RESERVOIR
      585-267            000012408    01            PACKING, PREFORMED (FOR ABOVE)

26/01/78 1 01011 093.0  U C C A M Y N 2202  00.0  00.1  00.1 1  00.0 TIGHTEN PANTOGRAPH ARM ASSEMBLY EPR          607
                                                                     FB-607

26/01/78 2 01011 093.0A U O O A C Y Y 1802  00.0  00.1  00.1 1  00.0 RE-WELD REAR CURBSIDE FENDER BRACKET         606
                                                                     EPR FB-606

27/01/78 1 01017 094.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.1 ADDED 1 QUART OIL TO ENGINE (OE-30)

27/01/78 2 01024 094.1  S C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GALLON TRANSMISSION OIL
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,937
 D          S OHR   A    T S E E T Q A C   G  CO     CH      MH    M OT                                  E
 A          H DON   C    A / C C M A M S   R  OL     LO      AO    E IT                                  P
 T          F OUD   T    S U H H '   T F   P  NY     OU      NU    N AM                                  R
 E          T MRS   N    K     R S            T      CR      R       GE                                  S
                                                     KS                    DESCRIPTION

28/01/78 1 01024 095.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.1 ADDED 1 GALLON OF OIL TO ENGINE

28/01/78 1 01039 036.0  U O O A M Y N 1311  00.0  01.5  04.5 3  00.0 REMOVED WHEEL AND TIRE, REMOVED OLD      626
                                                                     TIRE FROM WHEEL, MOUNTED NEW TIRE ON
                                                                     WHEEL, REINSTALLED WHEEL AND TIRE ON
                                                                     VEHICLE. EPR FB-626

PARTS 2507913             GP=000011311 NO=01 LIFE= UNK  TIRE PNUEMATIC 23X21, 20PR REAR CURBSIDE WHEEL

31/01/78 1 01039 037.0  U F F A M Y Y 1203  00.0  05.7  11.4 2  00.2 REPLACED LH BRAKE ASSEMBLY EPR F3-641   641
CRITICALITY FACTOR= 1.00

PARTS FF71118             GP=000011203 NO=01 LIFE= UNK  LH BRAKE ASSEMBLY AXLE

03/02/78 1 01049 038.0  S C C A M Y Y 0000  00.0  02.2  06.6 3  00.0 50 HOURS SERVICE EPR FB-640            640

03/02/78 1 01049 039.0  U C C A M Y N 1802  00.0  00.2  00.2 1  00.1 RE-TORQUED FENDER MOUNTING CAPSCREWS     702
                                                                     PART NO. 17C-820H EPR FB-702

03/02/78 1 01049 039.0A U O O A M N N 2202  00.0  00.2  00.2 1  00.0 REPLACED PANTOGRAPH ARM ASSEMBLY,        707
                                                                     ROADSIDE VISION PANEL. REMOVED CURBSIDE
                                                                     WIPER ASSEMBLY EPR FB-707

PARTS C-1505-L            GP=000012202 NO=01 LIFE=UNK   PANTOGRAPH ARM ASSY ROADSIDE VISION PANEL

07/02/78 2 01067 100.0  U O O A C Y N 1802  24.0  00.3  00.3 1  00.0 REPLACED CURBSIDE VISION PANEL EPR       648(S-1)
                                                                     FB-648(S-1)

PARTS 2545874             GP=000011802 NO=01 LIFE=UNK   PANEL, VISION

08/02/78 2 01070 101.0  U O O A M Y Y 0607  00.0  04.9  09.9 2  03.8 CHECKED ELECTRICAL SYSTEM REPLACED       712
                                                                     CONNECTOR IN K-4 RELAY BASE EPR FB-712
CRITICALITY FACTOR= 0.50

PARTS UNKNOWN             GP=000010607 NO=01 LIFE=UNK   PIN, RELAY BASE

09/02/78 1 01071 102.0  U O O A M N N 1802  00.0  00.1  00.2 2  00.0 STRAIGHTENED REAR ROADSIDE HEADLAMP      720
                                                                     GUARD EPR FB-720

09/02/78 1 01071 102.0A U O O A M N N 2408  00.0  00.1  00.2 2  00.0 STRAIGHTENED EDGE OF HYDRAULIC TANK EPR  720
                                                                     FB-720
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,937
 D         S OHR   A     T S E E T Q A C   G  CO    CH    MH    M OT                                       E
 A         H DON   C     A / C C M A M S   R  OL    LO    AO    E IT                                       P
 T         F OUD   T     S U H H '   T F   P  NY    OU    NU    N AM                                       R
 E         T MRS   N     K     R S            T     CR    R       GE                                       S
                                                    KS                DESCRIPTION

 10/02/78 2 01076 103.0  U O O A M Y N 0106  00.0  00.2  00.4 2  00.2 CHECKED LUBRICATION SYSTEM EPR FB-734     734

 13/02/78 1 01081 104.0  U O O A M Y Y 0700  00.0  01.6  05.3 2  01.4 ALIGNED TRANSMISSION MOUNT AND           712(S-1)
                                                                      TIGHTENED BOLTS EPR FB-712(S-1)
CRITICALITY FACTOR= 1.00

 14/02/78 1 01081 104.0A U O O A M Y N 0710  00.0  00.8  09.7 3  03.9 DIAGNOSED TRANSMISSION SHIFTING PROBLEM  712(S-1)
                                                                      REPLACED L-10 SHIFT SOLENOID EPR
                                                                      FB-712(S-1)

 PARTS 236402              GP=000010710 NO=01 LIFE=UNK    SOLENOID

 15/02/78 1 01081 105.0  U O O A M Y N 0608  00.0  00.8  04.1 0  03.3 TESTED MODULATOR LOCK-UP CIRCUIT         743
                                                                      REPLACED SPEED CONTROL SWITCH EPR
                                                                      FB-743

 PARTS 2546583             GP=000010608 NO=01 LIFE=UNK    SWITCH, ELECTRIC CONTROL

 21/02/78 2  1096 106.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 2 GALLONS HYDRAULIC OIL

 27/02/78 2  1096 107.0  U O O A M N N 2407  00.0  00.4  00.8 2  00.0 RESET HYDRAULIC PRESSURE ON DOLLY WHEEL  815
                                                                      CYLINDERS TO 2100 P.S.I. (FOR AIRCRAFT
                                                                      LOADING AS PER EMO) EPR FB-815

 02/03/78 1  1098 108.0  U O O A M Y Y 2407  00.0  00.6  01.2 2  00.0 REPLACED THE ROADSIDE DOLLY WHEEL        810
                                                                      CYLINDER PISTON ROD. EPR FB-810

 PARTS 2508337             GP=   012407 NO=01 LIFE= UNK   DOLLY CYLINDER ROADSIDE DOLLY WHEEL

 04/02/78 2 01100 109.0  S C C A M Y N       00.0  00.3  00.9 3  00.0 PERFORMED 50 HOUR MAINTENANCE EPR        841
                                                                      FB-841

 23/03/78    1104 110.0  U O O A   Y Y 1414         0.1   0.1 1         INSTALLED SEAL KIT ON STEERING CONTROL 177
                                                                      VALVE EPR FB-177

 PARTS 996330              GP=000011414 NO=01 LIFE=  755 KIT, SEAL REPAIR

 23/03/78    1104 110.0A U O O A   Y Y 0106         0.8   0.8 1         REPLACED HOSES WHICH CONNECTS BETWEEN  989
                                                                      THE FULL FLOW OIL FILTER AND OIL COOLER
                                                                      AND ENGINE. EPR FB-989

 PARTS 2549907             GP=000010106 NO=01 LIFE=       HOSE ASSY
       2547900                000010106    01             HOSE ASSY
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,937
D          S OHR    A     T S E E T Q A C    G  CO     CH      MH     M OT
A          H DON    C     A / C C M A M S    R  OL     LO      AO     E IT                                          E
T          F OUD    T     S U H H *   T F    P  NY     OU      NU     N AM                                          P
E          T MRS    N     K     R S             T      CR      R        GE                                          R
                                                       KS                    DESCRIPTION                            S

23/03/78     1104 110.0B U O O A    Y N 0607          0.1    0.1 1        REPLACED HORN PUSH SWITCH. EPR FB-992     992

PARTS 9183                 GP=000010607 NO=01 LIFE=       PUSH SWITCH, HORN

23/03/78     1104 110.0C U O O A    Y Y 2406          0.3    0.3 1        REPLACED O-RING IN HYDRAULIC LINE         993
                                                                       COUPLING AT THE HYDRAULIC MANIFOLD. EPR
                                                                       FB-993

PARTS 91F-10               GP=    012406 NO=01 LIFE=      PACKING PREFORMED

23/03/78     1104 110.0D U O O A    N N 0106          0.5    0.5 1        REPLACED NUT ON TURBOCHARGER MOUNT. EPR   995
                                                                       FB-995 ITEM 1

PARTS 107440               GP=    010108 NO=01 LIFE=      NUT

23/03/78     1104 110.0E U C C A    N N 0401          0.1    0.1 1        TIGHTENED EXHAUST CLAMP AT                995
                                                                       TURBOCHARGER. EPR FB-995

23/03/78     1104 110.0F U C C A    N N 0304          0.3    0.3 1        CLEAN AND SERVICE AIR FILTER. EPR         995
                                                                       FB-995

23/03/78     1104 110.0G U O O A    Y N 0613          0.1    0.1 1        INSTALLED CABLE TIE. EPR FB-995           995

PARTS SST2M-4              GP=    010613 NO=02 LIFE=      CABLE TIE.

23/03/78     1104 110.0H U F F A    N N 1802          0.5    0.5 1        REPLACED WINDSHIELD GLASS ON OPERATORS    995
                                                                       SIDE. EPR FB-995

PARTS 2545874              GP=    011802 NO=01 LIFE=  029 VISION PANEL.

23/03/78     1104 110.0I U O O A    Y N 2202          0.3    0.3 1        REPLACED WINDSHIELD WIPER MOTOR CONTROL   995
                                                                       VALVE. EPR FB-995

PARTS GF-220               GP=    012202 NO=01 LIFE=      VALVE, PARKING PRESSURE

23/03/78     1104 110.0J U O O A    Y N 0607          0.5    0.5 1        REPLACED TACHOMETER ASSY. EPR FB-995      995

PARTS 5659022              GP=    010607 NO=01 LIFE=      TACHOMETER, ELEC.

23/03/78     1104 110.0K U O O A    Y Y 0613          0.2    0.2 1    0.1 RECONNECTED LOOSE WIRES AT SPEEDOMETER    995
                                                                       SIGNAL GENERATOR. EPR FB-995
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03/05/79
MAINTENANCE TASK LOG    TFST ,FAMECE1 TEST ITEM ,937
 D        S OHR    A    T S E E T Q A C    G  CD    CH     MH    M DT
 A        H DON    C    A / C C H A M S    R  OL    LO     AO    E IT                                          E
 T        F OUD    T    S U H H •   T F    P  NY    OU     NU    N AM                                          P
 E        T MRS    N    K     R S             T     CR     R       GE                                          R
                                                    KS                  DESCRIPTION                            S

23/03/78    1104 110.0L U O O A    Y Y 0108          0.3    0.3 1      TIGHTENED EXHAUST MANIFOLD BOLTS EPR     995
                                                                      FB-995

23/03/78    1104 110.0M U O O A    Y Y 0106          0.5    0.5 1      REPLACED FITTINGS ON ENGINE OIL FILTER.  995
                                                                      EPR FB-995

23/03/78    1104 110.0N U O O A    Y N 0306          0.1    0.1 1      REPLACED BOLT IN FUEL LINE RETAINING     995
                                                                      CLAMP EPR FB-995

PARTS UNK              GF=   010306 NO=01 LIFE=          SCREW, CAP

23/03/78    1104 110.00 U O O A    Y Y 0700          0.1    0.1 1      REPLACED BOLT IN TRANSMISSION OUTPUT     995
                                                                      SHAFT COVER. EPR FB-995

PARTS LC-820           GP=   010700 NO=01 LIFE=          SCREW
      7E-08                  010700    01                WASHER

23/03/78    1104 110.0P U C C A    N N 2406          0.1    0.1 1      TIGHTENED FITTING ON DOLLY WHEEL         995
                                                                      HYDRAULIC CYLINDER EPR FB-995

23/03/78    1104 110.0Q U O O A    Y Y 0612          0.5    0.5 1      CLEANED AND SERVICED BATTERIES AND       995
                                                                      BATTERY BOX. REPLACED ONE CRACKED
                                                                      BATTERY. EPR FB-995

PARTS 1980175          GP=   010612 NO=01 LIFE=          BATTERY

23/01/78    1104 110.0R U C C A    N N 2403          0.1    0.1 1      TIGHTENED CABLE MOUNTING NUT ON          995
                                                                      DIRECTIONAL CONTROL VALVE EFR FB-995

23/04/78    1104 110.0S U O O A    Y N 2406          0.1    0.1 1      REPLACED CLAMP ON HYDRAULIC LINE FROM    995
                                                                      TANDEM PUMP EPR FB-995

PARTS 30H-43           GP=   012406 NO=01 LIFE=          CLIP, RETAINING

23/03/78    1104 110.0T U O O A    Y Y 0612           .2     .2 1      REPLACED LEAD FROM BATTERY TO MASTER     995
                                                                      SWITCH. EPR FB-995

PARTS 2545665          GP=   010612 NO=01 LIFE=          LEAD, BATTERY

23/03/78    1104 110.0U U O O A    Y N 1501           .6     .6 1      STRAIGHTENED LEFT AND RIGHT LADDERS EPR  995
                                                                      FB-995
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,937
D          S OHR    A     T S E E T Q A C    G  CO     CH     MH     M OT                                        E
A          H DON    C     A / C C M A M S    R  OL     LO     AO     E IT                                        P
T          F OUD    T     S U M H '   T F    P  NY     OU     NU     N AM                                        R
E          T MRS    N     K     R S             T      CR      R       GE                                        S
                                                       KS                   DESCRIPTION

 23/03/78    1104 110.0V U C C A   N N 1801          0.1    0.1 1      TIGHTENED ENGINE COMPARTMENT REAR PANEL   995
                                                                     MOUNTING BOLTS. EPR FB-995

 23/03/78    1104 110.0W U C C A   N N 0501          0.1    0.1 1      TIGHTEN SURGE TANK MOUNTING BRACKET       995
                                                                     BOLTS. EPR FB-995

 23/03/78    1104 110.0X U C C A   N N 0108          0.7    0.7 1      TIGHTENED TURBOCHARGER MOUNTING BRACKET   995
                                                                     BOLTS. EPR FB-995

 23/03/78    1104 110.0Y S C C A   Y N 1311    .     2.2    4.4 2      REPLACED EXCESSIVELY WORN TIRE. EPR       995
                                                                     FB-995

 PARTS 2507913             GP=    011311 NO=01 LIFE=        TIRE
       811398                     011311    01              PACKING, PREFORMED

 23/03/78    1104 110.0Z U C C A   Y N 0609          0.1    0.1 1      TIGHTENED LOOSE GROUND WIRE ON SERVICE    995
                                                                     LIGHT. EPR FB-995

 23/03/78    1104 110.1  U O O A   Y Y 0312          0.1    0.1 1      INSTALLED BOLT + NUT ON SPEED LIMITER     995
                                                                     CONTROL LINKAGE AS A TEMPORARY FIX. EPR
                                                                     FB-995
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,938
 D          S OHR    A     T S E E T Q A C    G  CD     CH      MH     M OT                                        E
 A          H OON    C     A / C C M A M S    R  OL     LO      AO     E IT                                        P
 T          F OUD    T     S U M M *   T F    P  NY     OU      NU     N AM                                        R
 E          T MRS    N     K     R S             T      CR      P        GE                                        S
                                                        KS                      DESCRIPTION

16/08/77 1  52.5   1.0   U O O A C Y N 0910           0.4    0.4 1   0.2 CHECKED PLANETARY DRIVE FLUID LEVEL,      30.
                                                                         ADDED 400 ML TO CURBSIDE, 300 ML TO
                                                                         ROADSIDE. EPR FB-30.

16/08/77 1  52.5   1.0A  U C C A   Y N 0609           0.1    0.1 1         REPLACED CURBSIDE TAILLIGHT BULB. EPR     30.
                                                                         FB-30.

PARTS 15570-623            GF=000090609 NO=01 LIFF=         BULB, INCADESCENT, CURBSIDE, TAIL

16/08/77 1  52.5   1.0B  U O O A   Y N 1204           0.5     .5 1    .2 ADJUSTED SERVICE BRAKES. EPR FB-30.       30.

13/09/77 1 084.1 002.0   U O F A C Y Y 7471   00.0   01.0   01.0 1  00.1 WELDED CRACK IN SPRAY HEAD MAC SHOULD     128
                                                                         BE CHANGED FROM O TO F FOR THIS REPAIR
                                                                         EPR FB-128

13/09/77 1 084.1 002.0A  U C C A C Y N 1201   00.0   00.1   00.1 1  00.0 TIGHTENED TWO BOLTS ON PARKING BRAKE      126
                                                                         LEVER EPR FB-126

16/09/77 1 102.8 002.1   S C C A M Y N 0000   00.0    0.1    0.2 2        50 HOUR MAINTENANCE A. ADDED 40-50 MLS   1071
                                                                         OIL TO MIDMOUNT BEARING. EPR FB-1071

16/09/77 2 107.9 003.0   U C C A M Y N 1311   00.0   00.2   00.2 1  00.0 INFLATE TIRE TO 55 P.S.I. TIRE HAD LOW
                                                                         PRESSURE (40 P.S.I).

19/09/77 1 127.2 004.0   U O O A M Y Y 7471   00.0   00.2   00.1 2  00.1 DISCOVERED BOX FOR STORING FLEXIBLE       161.
                                                                         WATER HOSE BENT OUT OF SHAPE- HOSE
                                                                         CONTAINED WATER PART WAY UP
                                                                         HOSE-EXPANSION OR SWELL PLUS BOUNCING
                                                                         DURING OPERATION CAUSED COVER AND TOP
                                                                         OF BOX TO BEND OUTWARD-PROBABLE CAUSE,
                                                                         LEAKING SHUT-OFF VALVE. REMOVED HOSE
                                                                         AND POUNDED HOSE BOX BACK INTO SHAPE.
                                                                         EPR FB-161.

23/09/77 1 146.4 005.0   S C C A M Y N 00 0   00.0   00.1   00.1 1  00.0 50 HOUR MAINTENANCE A. ADDED 70 ML. OIL  1072
                                                                         TO MDMT. BEARING. EPR FB-1072

27/09/77 1 174.2 006.0   U F F A G N N 7471           1.9    1.9 1   1.0 REMOVED METALLIC DEBRIS FROM WATER PUMP  205
                                                                         IN DISTRIBUTOR. EPR FB-205
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,938
 O          S OHR    A     T S E E T Q A C    G  CO      CH     MH     M OT                                       E
 A          H DGN    C     A / C C M A M S    R  OL      LO     AO     E IT                                       P
 T          F OUD    T     S U H H *   T F    P  NY      OU     NU     N AM                                       R
 E          T HRS    N     K     R S             T       CR      R       GE                                       S
                                                         KS                       DESCRIPTION

29/09/77 2 203.1 007.0  S C C A M Y N 0000  00.0  00.4  00.4 1  00.0 PERFORMED 50 HR. MAINT EPR FB-1074        1074

04/10/77 2 250.2 007.1  S O O A M Y N 0000  00.0  00.2  00.2 1  00.0 PERFORMED 250 HOUR MAINTENANCE EPR        1082
                                                                     FB-1082

PARTS 569022-03            GP=000091000 NO=01 LIFE=       VENT ASSY, BREATHER, AXLE
      569022-03               000090900    01             VENT ASSY, BREATHER, MIDMOUNT
      AC43887                 000091204    01             FILTER ELEMENT, FL, POWER CLUSTER

06/10/77 2 272.2 007.2  U C C A M Y N 0609  00.0  00.2  00.2 1  00.0 REPLACED BURNED OUT TAIL LIGHT (RIGHT     239
                                                                     READ) EPR FB-239

PARTS 15570-623            GP=000090609 NO=01 LIFE=UNK    LAMP, INCANDESCENT

07/10/77   286.0 008.0  U O O A M N N 1811  00.0  00.2  00.2 1  00.0 RE-STRAIGHTEN SIGHT GUARD. GUARD WAS      242
                                                                     BENT WHEN DISTR. HIT A TREE LIMB EPR
                                                                     FB-242

12/10/77 2 303.4 009.0  S C C A M Y N 0000  00.0  00.5  01.0 2  00.0 PERFORMED 50 HR MAINTENANCE PER LUBE      404
                                                                     ORDER LO5--209-12 EPR FB-404

17/10/77 1 351.2 010.0  S C C A M Y N 0000  00.0  00.5  01.0 2  00.0 PERFORMED 50 HR MAINTENANCE PER LUBE      407
                                                                     ORDER LO5--209-12. EPR FB-407

18/10/77 1 359.8 011.0  U C C A M Y N 0000  00.0  00.1  00.1 1  00.0 ADDED 4 QTS OF TRANSMISSION FLUID

18/10/77 1 359.8 011.0A U C C A M Y N 1311  00.0  00.4  00.8 2         INFLATED TWO TIRES TO 55 PSI. FROM 45
                                                                     PSI

19/10/77 1 373.4 012.0  U C C A M Y N 1311  00.0  00.2  00.2 1  00.0 INFLATED LEFT REAR TIRE TO 55 PSI.

21/10/77 1 398.6 013.0  U O O A M Y Y 7471  00.0  00.1  00.1 1  00.0 REMOVED CRACKED SPRAY HEAD AND             413
                                                                     INSTALLED NEW SPRAY HEAD. SPRAY HEAD
                                                                     HAD CRACKED COMPLETELY ACROSS THE WIDTH
                                                                     OF THE FEMALE END- THROUGH THE THREADED
                                                                     HOLE FOR THE SET SCREW. THE SET SCREW
                                                                     IS USED TO PREVENT ROTATION OF THE
                                                                     SPRAY HEAD ON THE DISCHARGE PIPE. EPR
                                                                     FB-413

PARTS K19743               GP=000097471 NO=01 LIFE=UNK    SPRAY HEAD
CRITICALITY FACTOR= 0.50
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,938
 D         S OHR   A     T S E E T Q A C   G  CD     CH     MH     M OT                                              E
 A         H DON   C     A / C C M A M S   R  OL     LO     AO     E IT                                              P
 T         F OUD   T     S U H H *   T F   P  NY     OU     NU     N AM                                              R
 E         T HRS   N     K     R S            T      CR     R       GE                                               S
                                                     KS                     DESCRIPTION

21/10/77 1 398.6 013.0A S C C A M Y N 0000  00.0  00.7  01.4 2  00.0 PERFORMED 50 HR MAINTENANCE PER LUBE        444
                                                                     ORDER LO5- -209-12 ADDED 42 ML OF OE/HD
                                                                     TO THE MIDMOUNT BEARING. EPR FB-444

28/10/77 1 455.7 014.0  S C C A M Y N 0000  00.0  00.8  01.6 2  00.0 PERFORMED 50 HR MAINTENANCE PER LUBE        445
                                                                     ORDER LO5- -209-12. EPR FB-445

02/11/77 1 498.0 014.1  S O O A M Y N 0000  00.0  00.3  00.3    00.0 COMPLETED 500 HR MAINTENANCE EPR FB-420  420

PARTS 569022-03            GP=000090900 NO=01 LIFE=247.8 VENT ASSY, BREATHER, MIDMOUNT
      569022-03               000091000    01      247.8 VENT ASSY, BREATHER, AXLE
      AC43887                 000091204    01      247.8 FILTER ELEMENT, FL, POWER CLUSTER

09/11/77 1 550.7 015.0  S O O A M Y N 0000  00.0  01.5  03.0 2  00.0 PERFORMED 50 HOUR SERVICE PER LUBE          425
                                                                     ORDER LO5- -209-12. ADD 15 ML OF
                                                                     LUBRICANT TO MIDMOUNT. EPR FB-425

09/11/77 1 550.7 015.0A U C C A M Y N 0609  00.0  00.2  00.2 1  00.0 REPLACED CURBSIDE BRAKE LIGHT EPR           424
                                                                     FB-424

PARTS MS35478-1683         GP=000090609 NO=01 LIFE=UNK   LAMPINCADESCENT

09/11/77 1 550.7 015.0B U C C A M Y N 0609  00.0  00.2  00.2 1  00.0 REPLACED CURBSIDE CLEARANCE LIGHT, LAMP  406
                                                                     EPR FB-406

PARTS MS15570-723          GP=000090609 NO=01 LIFE=UNK   LAMP INCADESCENT CURBSIDE CLEARANCE LIGHT

09/11/77 1 550.7 015.0C U C C A M Y N 0609  00.0  00.2  00.2 1  00.0 REPLACED CURBSIDE TAILLIGHT EPR FB-414    414

PARTS MS15570-723          GP=000090609 NO=01 LIFE=UNK   LAMPINCADESCENT CURBSIDE COMPOSITE LITE

14/11/77 1 601.2 016.0  U C C A M Y Y 0000  00.0  00.3  00.8 3  00.0 50 HOUR MAINTENANCE IT TOOK 3 MEN 1.25     428,429
                                                                     HRS TO UNCOUPLE TH MODULES IT TOOK 3
                                                                     MEN .50 HRS TO COMPLETE MAINTENANCE AND
                                                                     RECOUPLE. EPR FB-428,429
CRITICALITY FACTOR= 1.00

22/11/77 1 712.3 016.1  S C C A M Y N 0000  00.0  00.2  00.2 1  00.0 COMPLETED 50 HOUR MAINTENANCE EPR          1048
                                                                     FB-1048
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,938
 D          S OHR   A     T S E E T Q A C   G  CD     CH     MH     M OT                                         E
 A          H OON   C     A / C C M A M S   R  OL     LO     AO     E IT                                         P
 T          F OUD   T     S U H H '  T F    P  NY     OU     NU     N AM                                         R
 E          T HRS   N     K     R S            T      CR     R       GE                                          S
                                                      KS                      DESCRIPTION

28/11/77 1 734.1 017.0  U O O A M Y Y 1311  00.0  02.0  04.0 2  00.0 REPLACE DEFECTIVE ROADSIDE TIRE EPR       433
                                                                     FB-433
CRITICALITY FACTOR= 1.00

PARTS 2507913              GP=000091311 NO=01 LIFE=        TIRE, PNEUMATIC

02/12/77 1 746.0 017.1  U O O A M Y N 7471  00.0  00.3  00.3 1  00.0 PIPE TO HOSE ADAPTER LEAKING AT INTAKE    435
                                                                     MANIFOLD. REMOVED THE ADAPTER AND
                                                                     PAINTED PIPE SEALANT ON THREADS OF
                                                                     INTAKE MANIFOLD. EPR FB-435

02/12/77 2 751.1 018.0  S O O A M Y N 0000  00.0  00.7  01.2 2  00.0 PREFORMED 250 HR. MAINTENANCE EPR         436
                                                                     FB-436

PARTS 569022-03            GP=000090900 NO=01 LIFE=253.1 VENT ASSY, BREATHER, MIDMOUNT
      569022-03               000091000    01      253.1 VENT ASSY, BREATHER, AXLE
      AC43887                 000091204    01      253.1 FILTER ELEMENT, FL, POWER CLUSTER

07/12/77 2 778.5 019.0  S O O A C N N 1811  00.0  08.6  17.1 2  00.0 WELD STEEL STIFFNER 3.5' X 2" TO INSIDE  437
                                                                     OF WATER TANK EPR FB-437

08/12/77 2 778.5  19.0A U O O A C Y N              1.5   1.5 1         WELDED 4.5" SQUARE PATCH ON SIDE OF      437
                                                                     TANK. PAINTED TANK WHERE WELDED.EPR
                                                                     FB-43

07/12/77 1 778.5  19.0B U F F A C N N 1811         0.7   1.4 2         REPLACED MANHOLE COVER LATCH. THE LATCH  185(S-1)
                                                                     HAD PREVIOUSLY BEEN BROKEN AND A NEW
                                                                     DESIGN WAS INSTALLED. EPR FB-185(S-1)

PARTS 2549739              GP=000091811 NO=01 LIFE=485.1 LATCH, MANHOLE COVER

15/12/77 2 817.3 020.0  S C C A M Y N 0000  00.0  00.3  00.6 2  00.0 PERFORMED 50 HOUR MAINTENANCE ADDED       439
                                                                     22.4 ML OF OIL TO MIDMOUNT BEARING EPR
                                                                     FB-439

21/12/77 1 850.4 021.0  S C C A M Y N 0000  00.0  00.4  01.2 3  00.0 50 HOUR MAINTENANCE ADD 30 ML OF          484
                                                                     LUBRICANT TO MIDMOUNT BEARING. EPR
                                                                     FB-484

03/02/78 1 890.2 022.0  U O O A M N N 7471  00.0  01.0  01.0 1  00.1 REINSTALLED BONNET ON GATE VALVE FIRE     703.
                                                                     HOSE ASSY. EPR FB-703.
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,938
 D          S OHR   A     T S E E T Q A C   G  CO     CH     MH    M DT                                      E
 A          H DON   C     A / C C M A M S   R  OL     LO     AO    E IT                                      P
 T          F OUD   T     S U H H '  T F    P  NY     OU     NU    N AM                                      R
 E          T HRS   N     K     R S            T      CP     R       GE                                      S
                                                      KS                     DESCRIPTION

08/02/78 2 898.1 023.0  U C C A M Y Y 7471  00.0  00.5  01.0 2  00.0 PRIMED PUMP ON SPRAYING SYSTEM BY       716
                                                                     FILLING WATER TANK EPR FB-716
CRITICALITY FACTOR= 0.50

09/02/78 2 908.6 023.1  S C C A M Y N 0000  00.0  00.2  00.2 1  00.0 COMPLETED 50 HOUR MAINTENANCE EPR      1083
                                                                     FB-1083

28/02/78 1 917.1 024.0  U O O A M Y N 0609  00.0  00.3  00.3 1  00.0 REPLACED CURBSIDE COMPOSITE LIGHT       807
                                                                     ASSEMBLY EPR FB-807

PARTS 11614157           GP=000090609 NO=01 LIFE=UNK    LIGHT, COMPOSITE

11/03/78 1 921.9  24.1  U F F A C N N              0.6   0.6 1      INSTALLED NEW COUPLING, NEW RETAINER    914
                                                                     AND NEW ACTUATOR ON WORK SECTION
                                                                     MIDMOUNTBEARING ASSY. EPR FB-914

PARTS 2545723            GP=000090900 NO=01 LIFE=       RETAINER
      2549110               000090900    01             COUPLING
      2545566               000090900    01             ACTUATOR

17/03/78 1 922.4 025.0  U O O A M Y N 1208  00.0  00.7  00.7 1  00.0 REPLACED HOSES ON AIR MANIFOLD EPR      885
                                                                     FB-885

PARTS 243R6-ASN6-A45S6-49 GP=000091208 NO=01 LIFE=UNK   HOSE ASSY.
      243R8-ASN8-J45S8-48    000091208    01      UNK   HOSE ASSY.

17/03/78 1 922.4 025.0A U O O A M Y N 0900  00.0  00.8  00.8 1  00.0 REPLACED ACTUATOR AND COUPLING ON       885
                                                                     MIDMOUNT BEARING ASSEMBLY EPR FB-885

PARTS 2545566            GP=000090900 NO=01 LIFE=       ACTUATOR
      2549110               000090900    01             COUPLING

17/03/78 1 922.4 025.0B U O O A M Y N 0900  00.0  00.2  00.2 1  00.0 REPLACED LUBRICATION FITTING IN         885
                                                                     PROPELLER SHAFT EPR FB-885

PARTS 8X157              GP=000090900 NO=01 LIFE=       FITTING, LUBRICATION

24/03/78   929.2 026.0  U O O A   N N 0900         0.1   0.1 1      REPLACED MIDMOUNT BEARING BREATHER      997
                                                                     VENT. EPR FB-997

PARTS G-131000           GP=   090900 NO=01 LIFE=178.1 VENT ASSY
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,938
 D        S OHR    A     T S E E T Q A C   G  CD     CH     MH     M DT                                   E
 A        H DON    C     A / C C M A M S   R  OL     LO     AO     E IT                                   P
 T        F OUD    T     S U H H '   T F   P  NY     OU     NU     N AM                                   R
 E        T MRS    N     K     R S            T      CR     R        GE                                   S
                                                     KS                     DESCRIPTION

 24/03/78     929.2 026.0A U C C A   N N 7471         0.1   0.1 1         TIGHTENED LEFT AND RIGHT SPRAY BAR    997
                                                                        ELBOW COUPLERS. EPR FB-997

 24/03/78 0 929.2 026.0B U C C A   N N 1811         0.2   0.2 1         TIGHTENED DISTRIBUTOR TANK MOUNTING   997
                                                                        BOLTS EPR FB-997

 24/03/78     929.2 026.0C U O O A   Y N 0609         0.1   0.1 1         RECONNECTED WIRE ON BLACKOUT HEADLIGHT.  997
                                                                        EPR FB-997

 24/03/78     929.2 026.0D U C C A   Y N 1201         0.1   0.1 1         INSTALLED BOLT AND LOCK WASHER ON     997
                                                                        PARKING BRAKE CABLE CLAMP. EPR FB-997

 PARTS 23C-612H              GP=000091201 NO=01 LIFE=        BOLT, MACHINE
       24E-06H                  000091201    01              WASHER, LOCK

 24/03/78     929.2 026.0E U C C A   Y N 2406         0.1   0.1 1         INSTALLED QUICK DISCONNECT PLUG (DUST  997
                                                                        COVER) ON PILOT LINE EPR FB-997

 PARTS P-25                  GP=000092406 NO=01 LIFE=        PLUG, QUICK DISC

 24/03/78 1 929.2 026.0F U O O A   Y Y 0900         1.0   1.0 1         INSTALLED NEW MIDMOUNT BEARING ASSY.  990(914-1)
                                                                        AND ACTUATOR ASSY. EPR FB-990(914-1)

 PARTS 2545566               GP=000090900 NO=01 LIFE=  7.3 ACTUATOR
       2549110                  000090900    01        7.3 COUPLING
       2547643                  000090900    01            BEARING ASSY, MID-MT

 24/03/78 0 929.2 026.0G U O O A M Y N 1811         0.1   0.1 1         WELDED CRACK ON FITTING AT BASE OF THE  717(S-1)
                                                                        SIGHT GAGE ASSEMBLY. EPR FB-717(S-1)

 20/04/78     947.8 027.0  U F F A M Y Y 1311  00.0  11.5   20.2 3   00.0 REPLACED WHEEL CYLINDERS AND BRAKE    1112
                                                                        SHOES. EPR FB-1112
CRITICALITY FACTOR= 1.00

 PARTS 840289                GP=000091202 NO=02 LIFE=        KIT,LINING
       840410                   000091202    02              CYLINDER ASSEMBLY,AC
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,939
 D         S OHR   A     T S E E T O A C   G  CO    CH     MH    M DT                                         E
 A         H DON   C     A / C C M A M S   R  OL    LO     AO    E IT                                         P
 T         F OUD   T     S U H H '   T F   P  NY    OU     NU    N AM                                         R
 E         T MRS   N     K     R S            T     CR     R       GE                                         S
                                                    KS                 DESCRIPTION

 18/09/77 2 273.2 001.0  S 0 0 A C N N 1802  00.0  00.4  00.4 1  00.0 INSTALL WINDSHIELD & WIPER ASSEMBLY

 18/08/77 2 273.2 001.0A S 0 0 A C N N 2201  00.0  00.8  00.8 1  00.0 ASSEMBLE AND INSTALL CAB RACK FRAME EPR  87
                                                                      FB-87

 18/08/77 2 273.2 001.0B S 0 0 A C N N 1801  00.0  00.5  01.0 2  00.0 INSTALL "ROPS" ON POWER SECTION

 18/08/77 2 273.2 001.0C S 0 0 A C N N 2202  00.0  01.0  01.0 1  00.0 INSTALL REARVIEW SIDE MIRRORS

 26/08/77 1 274.9   1.1  U C C A C Y Y 0000   0.0   1.5   3.0 2   0.0 EXPERIENCED DIFFICULTY IN UNCOUPLING.    85.
                                                                      EPR FB-85.
CRITICALITY FACTOR= 1.00

 27/08/77 1 277.7 001.2  U O O A C Y Y 0114  00.0  04.0  08.0 2  06.0 REPLACED DIRECTIONAL CONTROL VALVE. EPR  96
                                                                      FB-96
CRITICALITY FACTOR= 1.00

 PARTS VOP110DDD035       GP=000011414 NO=01 LIFE=UNK   DIRECTIONAL CONTROL VALVE

 29/08/77 1 277.9 002.0  U O O A C Y Y 1411  00.0  02.8  02.8 1  00.0 REPLACED HOSE BECAUSE OF PIN HOLE        86(S-1)
                                                                      LEAKS. EPR FB-86(S-1)
CRITICALITY FACTOR= 1.00

 PARTS 3230781-16-026     GP=000011411 NO=01 LIFE=UNK   HOSE NM

 01/09/77 1 278.1 002.0B U O O A C Y N 1411  00.0  00.9  00.9 1  00.2 REPLACE HOSE DUE TO INSTALLATION OF      53(S-1)
                                                                      WRONG HOSE TO BEGIN WITH EPR FB-53(S-1

 PARTS 242R4-JSN4-J90S4   GP=000011411 NO=01 LIFE=UNK   HOSE, NM

 01/09/77 1 278.1 003.0  U C C A C N N 0000  00.0  00.2  00.2 1  00.0 ADD 6 1/2 GALLONS OF HYDRAULIC - FLUID
                                                                      TO TANK

 03/09/77 2 297.3 006.0  U O O A C Y Y 2402  00.0  01.8  03.6 2  00.3 TROUBLE SHOOTING OIL LEAK FROM HIGH      62
                                                                      PRESSURE RELIEF VALVE, REMOVING VALVE,
                                                                      REPLACING "O" RING + RE-INSTALLING EPR
                                                                      FB-62
CRITICALITY FACTOR= 1.00

 PARTS 1 PP11-F6T-6S      GP=000012402 NO=01 LIFE=      ORING, HIGH PRESSURE RELIEF VALVE
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,939
 D         S OHR   A     T S E E T Q A C   G  CD    CH    MH    M DT                                      E
 A         H DON   C     A / C C M A M S   R  OL    LO    AO    E IT                                      P
 T         F OUD   T     S U H H '   T F   P  NY    OU    NU    N AM                                      R
 E         T HRS   N     K     R S            T     CR    F       GE                                      S
                                                    KS                   DESCRIPTION
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 03/09/77 2 300.0 005.0A S C C A C N N 0000  00.0  00.1  00.1 1  00.0 ADDED 4 GALLONS OE 10 HYDRAULIC

 03/09/77 2 300.6 007.0  U O O A C Y N 2406  00.0  00.4  00.4 1  00.0 HYDRAULIC HOSE FITTING REFLARED EPR      69
                                                                      FB-69

 07/09/77 1 300.6 007.0A U O O A M Y Y 2406  00.0  00.2  00.2 1  00.0 REPLACED HOSE AND RE-TIGHTENED EPR      69(S-1)
                                                                      FB-69(S-1)

 PARTS 56.5242R4JS44J90SL4 GP=000012406 NO=01 LIFE=UNK   REPLACED HOSE

 07/09/77 2 300.7 008.0  S C C A C Y N 0000  00.0  00.5  00.5 1  00.0 PERFORMED 50 HR LUBRICATION ADDED 150   120
                                                                      ML OF BRAKE FLUID . RETORQUED BOLT ON
                                                                      PTO DRIVE -SCRAPER BEARING BRACKET EPR
                                                                      FB-120

 08/09/77 1 301.6 009.0  U O O A C Y N 0000  00.0  00.1  00.1 1  00.0 RE-ATTACHED WARNING TABLE WHICH HAD
                                                                      FALLEN OFF THE UNIT DURING WASHING.

 08/09/77 1 301.6 009.0A U O O A C Y N 0115  00.0  00.1  00.1 1  00.0 RE-INSTALLED WARNING DECAL ON GRADER.    78
                                                                      CAME OFF DURING WASH DOWN EPR FB-78

 09/09/77 2 302.3 010.0  U O O A C Y Y 2202  00.0  00.2  00.2 1  00.0 A NEW NUT SECURING THE PANTGRAPH ARM     82
                                                                      ASSY WAS INSTALLED. BECAUSE THE
                                                                      ORIGINAL NUT FELL OFF EPR FB-82

 PARTS 500-3H            GP=000012202 NO=01 LIFE=        NUT,SLFLKG,HEX PHOS CTG #3-48 UNC

 12/09/77 2 308.1 011.0  U O O A C N N 2407  00.0  00.2  00.2 1  00.0 INSTALLED BOLT NUT AND WASHER TO SECURE  116
                                                                      THE ROD END OF DOLLY WHEEL ASSY TIGHTEN
                                                                      HOSE FITTING-LEAKING-THE DOLLY WHEEL
                                                                      HIT THE TOP OF A BANK WHILE GRADING +
                                                                      BROKE THE TOP SUPPORT EPR FB-116

 14/09/77 1 313.8 012.0  U O O A C Y Y 1411  00.0  01.5  01.5 1  00.5 TIGHTENED HOSE FITTING ( HAD TO PULL     98,123
                                                                      STEERING WHEEL ETC. ) EPR FB-98,123
CRITICALITY FACTOR= 1.00

 15/09/77 2 323.1 013.0  S C C A M N N 0501  00.0  00.1  00.1 1  00.0 ADDED 3 GALLONS OF COOLANT TO RADIATOR
                                                                      COOLANT LEVEL WAS LOW
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,939  .
 D          S OHR   A     T S E E T Q A C   G  CO      CH      MH     M DT                                        E
 A          H DON   C     A / C C M A M S   R  OL      LO      AO     E IT                                        P
 T          F OUD   T     S U H H '   T F   P  NY      OU      NU     N AM                                        R
 E          T MRS   N     K     R S            T       CR      R        GE                                        S
                                                       KS                      DESCRIPTION

 15/09/77 2 323.1 013.0A S C C A M Y N 1311  00.0  00.1  00.1 1  00.0 ADJUSTED TIRE PRESSURE TO 55 P.S.1. THE
                                                                      TIRE PRESSURE WAS LOW

 16/09/77 1 328.8 014.0  U O D A C Y Y 2402  00.0  01.3  02.6 2  00.5 REPLACED RELIEF VALVE. EPR FB-62(S-1)     62(S-1)
CRITICALITY FACTOR= 1.00

 PARTS 1ARXP3122-001         GP=000012402 NO=01 LIFF=UNK    VALVE, RELIEF

 16/09/77 1 328.8 014.0A U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 3 GALLONS OIL TO HYDRAULIC
                                                                      RESERVOIR

 16/09/77 1 328.8 014.0B U O D A M N N 0721  00.0  00.2  00.2 1  00.0 CHANGED TRANSMISSION FILTER AS DIRECTED  1092
                                                                      BY C.E.C. REP EPR FB-1092

 PARTS 215592                GP=000010721 NO=01 LIFE=UNK    ELEMENT ASSY,TRANSMISSION OIL FILTER

 16/09/77 2 334.4 015.0  S C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADD 1 GALLON OF OIL TO TRANSMISSION

 16/09/77 2 334.4 015.0A U C C A M Y N 0721  00.0  00.1  00.1 1  00.0 TIGHTENED DRAIN FITTING ON TRANSMISSION  173
                                                                      OIL FILTER SHELL ASSEMBLY. ( SLIGHT
                                                                      SEPAGE WAS NOTICED AROUND FITTING
                                                                      DURING INSPECTION OF VEHICLE AT CLOSE
                                                                      OF A DAY'S OPERATION. ) EPR FB-173

 17/09/77 2 334.7 016.0  S C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 1 GALLON OF COOLANT TO THE
                                                                      RADIATOR

 17/09/77 2 334.7 016.0A U O D A M N N 0721  00.0  00.2  00.2 1  00.0 INSTALLED TRANSMISSION FILTER EPR        1095
                                                                      FB-1095

 PARTS LF-511                GP=000010721 NO=01 LIFE=005.9 ELEMENT, FILTER

 20/09/77 2 356.8 016.1  U O O A C N N 1411  00.0  02.4  02.9 1  00.0 REMOVED AND INSTALLED NEW SELECTOR        146(S-1)
                                                                      VALVE. EPR FB-146(S-1)

 PARTS E1623-02              GP=000011411 NO=01 LIFF=UNK    VALVE, SELECTOR

 21/09/77 1 367.9 017.0  U C C A M N N 0000  00.0  00.3  00.3 1  00.0 ADDED 4 QUARTS OF ENGINE OIL ADDED 6
                                                                      QUARTS HYDRAULIC OIL
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,939
 D          S OHR   A    T S E E T Q A C   G  CD    CH    MH    M OT                                    E
 A          H DON   C    A / C C M A M S   R  OL    LO    AO    E IT                                    P
 T          F OUD   T    S U H H *   T F   P  NY    OU    NU    N AM                                    R
 E          T MRS   N    K     R S            T     CR    R       GE                                    S
                                                    KS                   DESCRIPTION

24/09/77 1 368.5 018.0  U O O I C N N 2407  00.0  00.5  00.5 1  00.0 INSTALL DOLLY WHEEL SHUT OFF VALVE. EPR  194
                                                                     FB-194

24/09/77 1 368.5 018.0A U O O A C Y Y 1411  00.0  01.0   2.0 2  00.1 REPLACED HOSE ASSEMBLY. IT HAS LEAKING    187
                                                                     PROFUSELY. EPR FB-187

PARTS PN37.50,242R-JSN4-  GP=000011411 NO=01 LIFE=      HOSE ASSY, N.M. J9054

24/09/77 1 369.0 019.0  U O O A M Y Y 2406  00.0  00.2  00.3 1  00.1 REPLACED HOSE END FITTING                 69(S-2)
                                                                     DEP5-201-20EPD9C184, FIG 140 ITEM 53
                                                                     EPR FB-69(S-2)

PARTS J90-SL4             GP=000012406 NO=01 LIFE=068.4 HOSE END FITTING

23/09/77 2 372.1 020.0  U O O A M Y N 0000  00.0  00.5  00.5 1  00.0 ADDED 2 1/2 GALLONS OF GO-90 TO THE
                                                                     RIGHT WHEEL.

24/09/77 2 372.2 020.0A U O O I M Y Y 1311  00.0  00.3  00.3 1  00.2 CLEANED OUT SAFETY RIM OF LEFT REAR       1096
                                                                     TIRE TO TRY TO ELIMINATE CHAFING NOISE.
                                                                     EPR FB-1096

26/09/77 1 390.5 021.0  U C C A M Y N 1100  00.0  00.2  00.2 1  00.1 TIGHTEN LUG NUTS (HUB BOLTS ON ROADSIDE   201
                                                                     WHEEL.) EPR FB-201

26/09/77 2 398.2 022.0  U C C A M Y N 0000  00.0  00.2  00.2 1  00.0 ADDED 1 GALLON HYDRAULIC FLUID

28/09/77 1 405.8 023.0  S C C A M Y N 0000  00.0  01.5  03.0 2  00.1 PERFORMED 50 HOUR MAINTENANCE EPR         1075
                                                                     FB-1075

28/09/77 2 419.8 024.0  U O O A C Y Y 1100  00.0  00.5  00.5 1  00.0 INSTALL LR AXLE STOP (REMOVED AXLE STOP  214
                                                                     FROM ANOTHER P.S. EPR FB-214

03/10/77 2 456.7 024.1  U C C A M Y N 0000  00.0  00.3  00.3 1  00.0 ADDED 4 GALLOS OF HYDRAULIC OIL

03/10/77 2 459.2 025.0  U O O A C Y Y 2406  00.0  00.3  00.3 1  00.2 REPLACE FLARED TUBE FITTING WHICH         227(69-1)
                                                                     ATTACHES TO "DINGER VALVE". THE
                                                                     FITTING'S FLARE WAS WORN BEYOND
                                                                     REFLARING, AND HAD TO BE REPLACED. .
                                                                     THIS IS A RECURRING INCIDENT EPR
                                                                     FB-227(69-1)

PARTS 242R4-JSN4-J90SL4   GP=000012406 NO=01 LIFE=158.6 HOSE ASSY, NON METALIC
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,939
 D        S OHR    A      T S E E T Q A C    G  CO     CH     MH     M DT                                              E
 A        H DON    C      A / C C M A M S    R  OL     LO     AO     E IT                                              P
 T        F OUD    T      S U H H *   T F    P  NY     OU     NU     N AM                                              R
 E        T HRS    N      K     R S             T      CR     R        GE                                              S
                                                       KS                     DESCRIPTION

04/10/77 2 471.2 026.0  U O O A M Y N 0000  00.0  00.3  00.3 1  00.0 ADD APROX 1 PINT OF G O GC TO
                                                                     DIFFERENTIAL

04/10/77 2 471.2 026.0A U O O A C Y Y 1501  00.0  00.2  00.2 1  00.0 RE-WELD TANK TO ITS SUPPORTING BRACKET.  228
                                                                     OLD WELD HAD BROKEN EPR FB-228

11/10/77 2 502.9 026.1  S O O A M Y N 0000  00.0  02.8  05.6 2  00.0 COMPLETED 500 HOUR MAINTENANCE. EPR      1078
                                                                     FB-1078

PARTS MS-35802-3         GP=000010106 NO=02 LIFE=       FILTER ELEMENT, OIL, FULL FLOW
      9311                  000010106    02             FILTER ELEMENT, OIL, BYPASS
      5678                  000010309    02             CARTRIDGE, FUEL FILTER
      LF-511                000010721    01             FILTER ELEMENT, OIL, TRANSMISSION
      299080                000010508    01             FILTER ELEMENT, WATER, CORROSION RESIST
      AC43887               000011202    01             FILTER ELEMENT, FL, POWER CLUSTER
      569022-03             000010900    01             VENT ASSY, BREATHER, MDMT
      569022-03             000011100    01             VENT ASSY, BREATHER, AXLE
      569020-03             000010700    01             VENT ASSY, BREATHER, TRANSMISSION
      P11-7437              000010304    01             FILTER, AIR
      2940-00-487-2789      000010304    01             FILTER, AIR

13/10/77 1 521.0 027.0  U O C I M N N 2201  00.0  00.2  00.4 2       INSTALLED CANVAS CAB ASSEMBLY, (TM DEP
                                                                     5- -201-20+P INADEQUATE TM STATES THE
                                                                     PERTINENT CANVAS CAB ILLUSTRATIONS FIG
                                                                     2-17C, PAGE 2-80C + FIGURE 132, PAGE
                                                                     C-172 SHALL BE SUPPLIED LATER.)

13/10/77 2 521.3 028.0  U O O A C N N 1501  00.0  00.5  00.5 1  00.0 WELD MODIFIED FUEL TANK MOUNTING          228(S-1
                                                                     BRACKET TO THE FRAME - ( THIS IS A
                                                                     CLARK EQUIP TO MODIFICATION THAT WILL
                                                                     BE INSTALLED IN ALL POWER SECTIONS )
                                                                     EPR F3-228(S-1)

PARTS X2544952           GP=000010306 NO=01 LIFE=       BRACKET,FUEL TANK MTG

15/10/77 1 526.7 028.1A U C C A M N N 0000  00.0  00.2  00.2 1  00.0 DURING PRE-OPERATIONAL CHECK, CREW
                                                                     ADDED 3 GAL. OF HYDRAULIC OIL TO THE
                                                                     HYDRAULIC RESERVOIR.

17/10/77 2 544.7 029.0  U C C A M N N 0612         0.2   0.2 1       TIGHTEN LOOSE BATTERY CABLE EPR FB-1097  1037
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,939
 D         S OHR   A     T S E E T Q A C   G  CO     CH     MH     M DT                                       E
 A         H DON   C     A / C C M A M S   R  OL     LO     AO     E IT                                       P
 T         F OUO   T     S U H H *   T F   P  NY     OU     NU     N AM                                       R
 E         T MRS   N     K     R S             T     CR     R        GE         DESCRIPTION                   S
                                                     KS

 18/10/77 2 556.0 030.0  S C C A M Y N 0000         0.7    1.4 2         PERFORMED 50 HOUR SERVICE EPR FB-1076     1076

 18/10/77 2 556.0 030.0A U O O A M Y Y 1201  00.0  00.5   00.5 1  00.0 INSTALL PARKING BRAKE CABLE, TO REPLACE  284
                                                                      DAMAGED PARKING BRAKE CABLE EPR FB-284

 PARTS 2546146           GP=000011201 NO=01 LIFE=UNK    CABLE, REMOTE ACTR

 21/10/77 2 592.0 031.0  U O O A M Y Y 1201  00.0  01.3   01.3 1  00.3 REPLACED BROKEN PARKING BRAKE CABLE EPR  290(284-1)
                                                                      FB-290(284-1)
CRITICALITY FACTOR= 1.00

 PARTS 2546146           GP=000011201 NO=01 LIFE=036.0 CABLE, REMOTE ACTR

 21/10/77 2 592.0 031.0A U C C I M Y N 2201  00.0  00.1   00.1 1  00.0 REMOVED RIGHT DOOR-REMOVEC BOTTOM HINGE  291
                                                                      PIN (TOP HINGE PIN FELL OFF) EPR FB-291

 22/10/77 2 602.7 032.0  S C C A M Y N 0000         0.7    0.7 1         PERFORMED 50 HR. MAINTENANCE PER LUBE     1080
                                                                      ORDER LO5-3840-201-12. EPR FB-1080

 22/10/77 2 602.7 032.0A U C C A M N N 0000  00.0  00.1   00.1 1  00.1 ADDED 4 QTS OF TRANSMISSION OIL TO THE
                                                                      TRANSMISSION.

 22/10/77 2 602.7 032.0B U O O I M Y Y 0000         1.0    4.0 4         DIFFICULTY IN COUPLING. EPR FB-1080      1080

 25/10/77 1 607.9 033.0  U C C A M N N 0000  00.0  00.1   00.1 1  00.0 ADDED 2 QTS OF COOLANT TO THE RADIATOR.

 26/10/77 2 627.7 034.0  U C C I M Y N 0609         0.2    0.2 1         REPLACED BURNED OUT RIGHT REAR            288(S-1)
                                                                      CLEARANCE LIGHT BULB EPR FB-288(S-1)

 PARTS MS15570-1251      GP=000010609 NO=01 LIFE=UNK    LAMP, INCANDESCENT

 27/10/77 2 631.4 035.0  U O O A C Y Y 2402  00.0  01.5   01.5 1  00.0 WELD BROKEN PIVOT BRACKET AND TOGGLE     293,294
                                                                      LEVER. EPR FB-293,294
CRITICALITY FACTOR= 1.00

 27/10/77 2 631.4 035.0A U O O A M Y N 0609         0.2    0.2 1         ADJUST FLOOD LIGHTS EPR FB-1098           1098

 31/10/77 2 656.3 036.0  U O O A M N N 1802  00.0  00.3   00.3 1  00.0 REMOVE WINDSHIELD ASSY BY DIRECTION OF   335
                                                                      P.M. FAMECE EPR FB-335
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,939
 D          S OHR    A     T S E E T Q A C   G  CD    CH     MH     M OT                                      E
 A          H OCN    C     A / C C M A M S   R  OL    LO     AO     E IT                                      P
 T          F OUD    T     S U H H '   T F   P  NY    OU     NU     N AM                                      R
 E          T MPS    N     K     R S             T    CR      R      GE                                       S
                                                      KS                  DESCRIPTION

 31/10/77 2 656.3 036.0A U O O A M N N 2201  00.0  00.6  01.2 2  00.0 REMOVE CANVAS CAB COVER BY DIRECTION OF  335
                                                                      P.M. FAMECE EPR FB-335

 02/11/77 1 672.2 036.1  U O O I M Y Y 1410  00.0  00.5  01.0 2  00.2 REMOVED STEERING WHEEL, DIRECTION AND     386
                                                                      SPEED CONTROL SWITCHES. REMOVED BOLTS
                                                                      HOLDING STEERING VALUE TO COCKPIT FRAME
                                                                      ALLOWING ACCESSIBILITY TO STEERING
                                                                      VALVE. TIGHTENED HOSE CONNECTIONS EPR
                                                                      FB-386

 03/11/77 1 684.4 037.0  U C C A M N N 1206  00.0  00.2  00.2 1  00.0 REINSTALLED HANDLE ON EMERGENCY AIR       341
                                                                      CONTROL VALVE. HANDLE WAS FOUND ON
                                                                      FLOOR OF COCKPIT. EPR FB-341

 04/11/77 1 697.6 038.0  U O O A M Y Y 1201  00.0  02.0  02.0 1  01.8 REPLACED PARKING BRAKE ACTUATOR CABLE     342
                                                                      EPR FB-342

 PARTS 2546146          GP=000011201 NO=01 LIFE=106.2 CABLE REMOTE ACTUATOR

 05/11/77 2 700.9 041.0  S C C A M Y N 0000         1.5   3.0 2         PERFORMED 50 HR MAINTENANCE EPR FB-1077  1077

 07/11/77 1 706.9 042.0  S O O I M N N 2201  00.0  01.2  02.4 2  00.0 REINSTALLED CANVAS CAB COVER

 07/11/77 1 706.9 043.0  U O O A M N N 0900  0      1.2   1.2 1   0.2 REPLACED PROPSHAFT TO MID MOUNT BEARING  1099
                                                                      EPR FB-1099

 PARTS 2A-23533-1       GP=000010900 NO=01 LIFF=UNK   U JOINT ASSY DOUBLE MIDMOUNT BEARING

 07/11/77 2 708.8 043.1  U C C A M N N 0000  00.0  00.3  00.3 1  00.0 ADDED 4 QUARTS OF HYDRAULIC OIL

 08/11/77 1 709.6 044.0  U F F I C N N 1501  00.0  01.3  01.5 2  00.0 REPLACED DOLLY WHEEL CYLINDER BRACKET     116
                                                                      ON COUPLER FRAME. DAMAGED ON 12 SEPT
                                                                      1977 EPR FB-116 USED TORCH TO BURN
                                                                      REMAINS OF ORIGINAL BRACKET OFF, GROUND
                                                                      DOWN OLD WELDS AND SMOOTHED SURFACE.
                                                                      WELDED NEW BRACKET ON. 1 MAN X 1.1
                                                                      HOURS " 2 MEN X .2 HRS EPR FB-116(S-1)

 PARTS UNK              GP=000011501 NO=01 LIFF=308.1 DOLLYWHEEL CYLINDER BRACKET
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,939
D        S OHR    A     T S E E T Q A C   G  CD    CH    MH    M DT                                  E
A        H DCN    C     A / C C M A M S   R  OL    LO    AO    E IT                                  P
T        F OUD    T     S U H H '   T F   P  NY    OU    NU    N AM                                  R
E        T MRS    N     K     R S            T     CR    R      GE                                   S
                                                   KS                 DESCRIPTION

08/11/77 1 709.6 044.0A U O O A C N N 2407  00.0  00.5  00.5 1  00.0 REPLACED DOLLY CYLINDER ON CURBSIDE.      116(S-1)
                                                                     EPR FB-116(S-1)

PARTS 2508337               GP=000012407 NO=01 LIFE=UNK    DOLLY CYLINDER

08/11/77 2 709.6 044.0B U C C A M Y N 0609  00.0  00.2  00.2 1  00.0 REPLACED BURNED OUT CURBSIDE FLOOD         388
                                                                     LIGHT EPR FB-388

PARTS 4578                  GP=000010609 NO=01 LIFE=UNK    LAMP

08/11/77 2 709.6 044.0C U O D A M Y N 1801  00.0  00.1  00.1    00.0 WELD HOOD HINGE - BROKEN IN ACCIDENT ON  343(S-3)
                                                                     7 NOV 77. EPR FB-343(S-3)

09/11/77 1 714.8 045.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 3 GALLONS OE-10 TO HYDRAULIC RES.

11/11/77 1 738.4 046.0  U C C A M N N 0000  00.0  00.3  00.3 1  00.1 ADDED 1 GALLON OE-10 OIL TO HYDRAULIC
                                                                     RESERVOIR. ADDED 3 QUARTS ANTI- FREEZE
                                                                     TO COOLING SYSTEM.

14/11/77 1 766.9 047.0  U O O A M Y Y 0501  00.0  00.3  00.3 1  00.1 HOSE ASSY FROM WATER PUMP TO CORROSION     394
                                                                     RESISTOR FILTER ASSY SHUT-OFF VAVLE
                                                                     LEAKING AT VALVE. TIGHTENED HOSE CLAMP.
                                                                     EPR FB-394

14/11/77 2 778.4 048.0  S C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 1 GALLON OF OIL TO ENGINE

16/11/77 2 792.2 049.0  U O O A M Y Y 2402  00.0  07.0  07.0 1  00.0 REPLACED AUX. STEERING CONTROL CABLE      336(S-1)
                                                                     ASSY EPR FB-336(S-1)
CRITICALITY FACTOR= 0.50

PARTS C81295-3              GP=000012402 NO=01 LIFE=UNK    CONTROL CABLE ASSY

16/11/77 1 792.4 049.0A U C C A M N N 0000  00.0  00.3  00.3 1  00.1 ADDED 1 QUART OF LUBRICANT (GO) TO
                                                                     RIGHT REAR PLANETARY ASSEMBLY

17/11/77 1 793.0 050.1  S O O A M Y N 0000  00.0  02.5  05.0 2  00.0 COMPLETED 250 HOUR MAINTENANCE EPR        1079
                                                                     FB-1079

PARTS MS-35802-3            GP=000010106 NO=02 LIFE=290.1 FILTER ELEMENT, OIL, FULL FLOW
      9311                     000010106    02      290.1 FILTER ELEMENT, OIL, BYPASS
      5678                     000010309    02      290.1 CARTRIDGE, FUEL FILTER
      LF-511                   000010721    01      290.1 FILTER ELEMENT, OIL, TRANSMISSION
      299080                   000010508    01      290.1 FILTER ELEMENT, WATER, CORROSION RESIST
      AC43387                  000011202    01      290.1 FILTER ELEMENT, FL, POWER CLUSTER
      569022-03                000010900    01      290.1 VENT ASSY, BREATHER, MDMT
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,939
 D        S OHR   A     T S E E T Q A C   G  CD     CH    MH    M DT                                  E
 A        H DON   C     A / C C M A M S   R  OL     LO    AO    E IT                                  P
 T        F OUD   T     S U H H '   T F   P  NY     OU    NU    N AM                                  R
 E        T MRS   N     K     R S            T      CR     R      GE                                  S
                                                    KS                     DESCRIPTION

       569022-03              000011100    01       290.1 VENT ASSY, BREATHER, AXLE
       569020-03              000010700    01       290.1 VENT ASSY, BREATHER, TRANSMISSION

17/11/77 2 793.7 051.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 6 QUARTS OF TRANSMISSION OIL

18/11/77 1 798.2 052.0  U O O A M Y Y 2406  00.0  00.7  01.4 2  00.3 REPLACE DEFECTIVE HYDRAULIC PRESSURE    653
                                                                     VALVE EPR FB-653

PARTS 1PD11-F6T-65          GP=000012406 NO=01 LIFF=UNK   VALVE, PRESSURE RDC/RLV

19/11/77 1 808.6 053.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.1 ADDED 2 GALLONS OE-10 TO HYDRAULIC
                                                                     RESERVOIR

19/11/77 2 819.5 054.0  S C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 4 QUARTS OF TRANSMISSION OIL

21/11/77 1 824.6 054.1  U O O A M N N 2402  00.0  00.2  00.2 1  00.1 REINSTALLED STR HEADED PIN, AND          617
                                                                     REPLACED COTTER KEY, AUX. STEER CONTROL
                                                                     CABLE. EPR FB-617

PARTS 1F-312H               GP=000012402 NO=01 LIFE= 31.6 COTTER, KEY AUX STEER CONTROL CABLE, ROD END

22/11/77 1 833.6 055.0  U C C A M Y N 0000  00.0  00.1  00.1 1  00.0 ADDED 2 QTS. OF TRANSMISSION FLUID TO
                                                                     THE TRANSMISSION ASSEMBLY DURING PRE
                                                                     OPERATION INSPECTION

28/11/77 1 843.9 056.0  U C C A M Y N 0612  00.0  00.1  00.2 2  00.1 CLEANED AND REPAIRED BATTERY CROSSOVER   656
                                                                     LEAD EPR FB-656

09/12/77 2 862.7 057.0  U O O A M Y Y 1208  00.0  00.4  00.3 1  00.1 REPLACE BROKEN DRAIN VALVE IN AIR        658
                                                                     RESERVOIR EPR FB-658

PARTS 281923                GP=000011208 NO=01 LIFE=UNK   VALVE, DRAIN

12/12/77 1 863.3 058.0  U C C A M N N 0612  00.0  01.0  02.0 2  00.2 DEAD BATTERIES. STARTED VEHICLE WITH     576
                                                                     EXTERNAL SOURCE. EPR FB-576

13/12/77 2 876.7 059.0  U O O A M Y Y 1100  00.0  00.5  01.0 2  00.0 REPLACED NON-ADJUSTABLE + ADJUSTABLE     456,457
                                                                     AXLE STOPS EPR FB-456,457

16/12/77 1 880.6 060.0  U O O A M N N 1208         0.6   1.8 3  02.0 LOSS OF AIR PRESSURE, PARKING BRAKE      534
                                                                     ENGAGED REMOVED LOCKING PIN, FROM
                                                                     SPRING BRAKE CHAMBER PISTON ROD PART
                                                                     9050035 EPR FB-534
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,939
 D         S OHR   A      T S E E T Q A C   G  CO      CH      MH      M DT                                                   E
 A         H DON   C      A / C C M A M S   R  OL      LO      AO      E IT                                                   P
 T         F OUD   T      S U H H '   T F   P  NY      OU      NU      N AM                                                   R
 E         T HRS   N      K     R S            T       CR       R       GE                                                    S
                                                       KS                   DESCRIPTION

 16/12/77 2 889.2 061.0  S C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 2 QUARTS ENGINE OIL

 17/12/77 1 889.8 062.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 1/2 GALLON TRANSMISSION FLUID

 17/12/77 1 893.1 063.0  S C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 2 QUARTS TRANSMISSION OIL

 04/01/78 1 900.2 064.0  U F F A C Y Y 1203  00.0  16.2  30.1 2  00.0 CANNOT ADJUST SERVICE BRAKES - REMOVED     492
                                                                    BOTH TIRES AND WHEELS FOUND SCREW ENDS
                                                                    OUT OF ROUND - REPAIRED SCREWS AND
                                                                    REASSEMBLED PLANETARY GEARS, WHEELS +
                                                                    TIRES, ADJUSTED BRAKES, INSTALLED L. H.
                                                                    BACKING PLATE ASSY EPR FB-492
CRITICALITY FACTOR= 1.00

 PARTS 119835              GP=000011203 NO=01 LIFE=UNK   BACKING PLATE ASSY L. H.

 04/01/78 2 900.2 064.0A U O O A M N N 0000  00.0  01.5  03.0 2  00.0 ADDED 11 QUARTS OF GO-90 AND 1 PINT OF
                                                                    BRAKE FLUID AS A RESULT OF DISASSEMBLY
                                                                    AND REPAIR OF BRAKE ADJUSTERS

 06/01/78 2 903.7 065.0  U O O A M Y Y 1003  00.0  01.6  03.1 2  00.0 ADJUST SERVICE BRAKES ON GRADER POWER      505
                                                                    SECTION EPR FB-505
CRITICALITY FACTOR= 1.00

 07/01/78 2 912.3 066.0  U F C A C Y N 0000  00.0  00.1  00.1 1  00.0 ADDED 2 GALLONS HYDRAULIC OIL

 11/01/78 1 914.5  67.0A S C C A M Y N 0000        00.4  01.2 3       PERFORMED 50 HR MAINTENANCE PER LUBE     538
                                                                    ORDER 605-3840-201-12 EPR FB-538

 13/01/78 1 931.3 068.0  S C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 2 QUARTS ENGINE OIL

 14/01/78 1 931.3 069.0A U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 3 GALS. OF HYDRAULIC FLUID.

 14/01/78 1 931.3 070.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GAL. OF ENGINE OIL.

 14/01/78 1 937.3 071.0  U C C A M Y N 0000  00.0  00.1  00.1 1  00.0 ADDED 3 GALLONS HYDRAULIC FLUID

 16/01/78 1 944.4 072.0  U C O A M Y Y 1208  00.0  00.1  00.2 1  00.1 HEATED AIR MANIFOLD COUPLING TO FREE      546
                                                                    ICE FROM CHECK VALVE EPR FB-546
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,939
 D          S OHR   A     T S E E T Q A C   G  CD     CH     MH    M DT
 A          H DON   C     A / C C M A M S   R  OL     LO     AO    E IT                                 E
 T          F OUD   T     S U H H '   T F   P  NY     OU     NU    N AM                                 P
 E          T MRS   N     K     R S            T      CR     R       GE                                 R
                                                      KS                   DESCRIPTION                  S

23/01/78 1 962.4 073.0  U C C A M Y N 0000  00.0  00.1  00.1 1  00.0 ADDED 2 GALLONS HYDRAULIC OIL

24/01/78 1 970.8 073.1  U O O A M Y Y 0721  00.0  00.2  00.2 1  00.0 REPLACED TRANSMISSION FILTER PACKING     618
                                                                    EPR FB-618

PARTS 173368            GP=000010721 NO=01 LIFE=177.8 PACKING, PREFORMED

24/01/78 2 976.7 074.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 2 QUARTS OF TRANSMISSION OIL

24/01/78 2 976.7 074.0A U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 2 QUARTS OF ENGINE OIL

25/01/78 2 982.9 075.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 3 QUARTS OF ENGINE OIL

25/01/78 2 982.9 075.0A U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 2 QUARTS OF TRANSMISSION OIL

26/01/78 1 983.1 076.0  U O O A M Y N 2402  00.0  00.1  00.1 1  00.1 REPLACED STR HEADED PIN PART 2F-090623   608
                                                                    WITH A BOLT OF SIMILAR SIZE PIN NOT
                                                                    AVAILABLE. STR HEADED PIN LOCATED IN
                                                                    CONTROL BOX ASSEMBLY ROAD SIDE DOLLY
                                                                    WHEEL CONTROL CABLE. EPR FB-608

27/01/78 1 984.1 077.0  U C C A M Y N 0000  00.0  00.1  00.1 1  00.1 ADDED 1 GALLON HYDRAULIC FLUID (OE-10)
                                                                    TO RESERVOIR

27/01/78 1 985.4 078.0  U F O A C Y Y 2402  00.0  00.2  00.2 1  00.1 REINSTALLED REPAIRED PIVOT BRACKET PART  609
                                                                    #2547166 TIME BETWEEN REPAIRS. 354.0
                                                                    HRS EPR FB-609
CRITICALITY FACTOR= 0.50

06/02/78 1 990.3 079.0  U O C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 2 QTS OF TRANSMISSION FLUID.

06/02/78 1 990.3 079.0A U C C A M N N 0000  00.0   0.1   0.1 1  00.0 ADDED 2 QTS OF ENGINE OIL.

07/02/78 1 997.4 080.0  U C C A M Y N 0312  00.0  00.6  01.2 2  00.0 OPERATED THROTTLE BY HAND AND USED       713
                                                                    ETHER TO START ENGINE EPR FB-713

08/02/78 1 01001  80.1  S O O A M Y N             12.0  14.2 3     PERFORMED 1000 HR MAINTENANCE PER LUBE    916
                                                                    ORDER LO5-3840-201-12 EPR FB-916

PARTS MS-35802-3        GP=000010106 NO=02 LIFE=208.0 FILTER ELEMENT, OIL, FULL FLOW
      9311                 000010106    02      208.0 FILTER ELEMENT, OIL, BYPASS
      5678                 000010309    02      208.0 CARTRIDGE, FUEL FILTER
      LF-511               000010721    01      208.0 FILTER ELEMENT, OIL, TRANSMISSION
      299080               000010508    01      208.0 FILTER ELEMENT, WATER, CORROSION RESIST
      AC43887              000011202    01      208.0 FILTER ELEMENT, FL, POWER CLUSTER
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,939
 D        S OHR    A     T S E E T Q A C   G  CD     CH     MH    M DT                                        E
 A        H OON    C     A / C C M A M S   R  OL     LO     AO    E IT                                        P
 T        F OUD    T     S U H H '   T F   P  NY     OU     NU    N AM                                        R
 E        T HRS    N     K     R S            T      CR     R       GE                                        S
                                                     KS                    DESCRIPTION

      569022-03               000010900    01       208.0 VENT ASSY, BREATHER, MOMT
      569022-03               000011100    01       208.0 VENT ASSY, BREATHER, AXLE
      569020-03               000010700    01       208.0 VENT ASSY, BREATHER, TRANSMISSION
      HC8300                  000012408    01             FILTER ELEMENT HYDRAULIC RESERVOIR
      585-267                 000012408    01             PACKING, PREFORMED (FOR ABOVE)

08/02/78 1 01001 081.0  U O O A M Y N 1201  00.0  00.1  00.1 1  00.1 TIGHTENED FITTING ON HOSE ASSEMBLY TO     719
                                                                      CAM VALVE AIR INPUT SIDE. PART NO.
                                                                      27.50, 243R4-JSN4-J45S4 EPR FB-719

11/02/78 2 01002 082.0  U O O A M Y N 1201  00.0  00.1  00.1 1  00.0 REPLACE ONE MISSING NUT ON THE PARKING   729
                                                                      BRAKE CALIPER ASSEMBLY EPR FB-729

PARTS 18C-1072H          GP=000011201 NO=01 LIFE=UNK   NUT

13/02/78 1 01006 083.0  U O O A M Y N 1201  00.0  00.8  00.8 1  00.0 REPLACED PARKING BRAKE, REMOTE ACTUATOR  732(284-2)
                                                                      CABLE. EPR FB-732(284-2)

PARTS 2546146            GP=000011201 NO=01 LIFE=308.7 CABLE, REMOTE ACTUATOR PARKING BRAKE

13/02/78 1 01006 083.0A U O O A M Y N 0501  00.0  00.1  00.2 2  00.0 TIGHTENED CONNECTOR ON SURGE TANK        730
                                                                      COOLANT LEVEL PROBE ASSY. PART NO.
                                                                      1596499 EPR FB-730

17/02/78 1 01022 084.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GALLON TRANSMISSION OIL

17/02/78 2 01022 085.0  U O O A M Y Y 0106  00.0  00.3  00.3 1  00.0 REPLACE DEFECTIVE ENGINE OIL PRESSURE    155,739
                                                                      SENDER EPR FB-155,739

PARTS MI-1421            GP=000010106 NO=00 LIFE=UNK   SENDER, PRESSURE

21/02/78 2  1035 086.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 3 GALLONS HYDRAULIC OIL

21/02/78 1  1035 087.0  U C C A M Y N 2202  00.0  00.3  00.3 1  00.0 REPLACED MIRROR MOUNTING YOKE ON         718,777
                                                                      ROADSIDE REAR VIEW MIRROR. EPR
                                                                      FB-718,777

PARTS 69-548             GP=     012202 NO=01 LIFE=662.6 MIRROR, MTG YOKE ROADSIDE OF COCKPIT

21/02/78 2  1042 088.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 2 GALLONS ENGINE OIL
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03/05/79
MAINTENANCE TASK LOG     TEST ,FAMECE1 TEST ITEM ,939
 D         S OHR   A     T S E E T Q A C  G  CD    CH   .MH    M DT                                          E
 A         H DON   C     A / C C M A M S  R  OL    LO    AO    E IT                                          P
 T         F OUD   T     S U H H '  T F   P  NY    OU    NU    N AM                                          R
 E         T MRS   N     K     R S           T     CR    R       GE                                          S
                                                   KS                     DESCRIPTION

21/02/78 2  1042 088.0A U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GALLON TRANSMISSION OIL

22/02/78 2  1048 089.0  U O O A M Y Y 2402  00.0  00.7  00.7 1  00.0 WELDED BROKEN SHAFT ON THE PINION PIVOT  774
                                                                    ASSEMBLY AND INSTALLED EPR FB-774

23/02/78 2  1054 090.0  U C C A M N N 0000  00.0  02.3  02.8 2  00.0 TIGHTEN MISCELLANEOUS LOOSE NUTS AND     783
                                                                    BOLTS EPR FB-783

24/02/78 2 01055 091.0  U O O A M Y Y 2402  00.0  00.3  00.3 1  00.0 REPLACED CAP IN DIRECTIONAL CONTROL      798
                                                                    VALVE EPR FB-798

PARTS 656589              GP=000012402 NO=01 LIFE=UNK    CAP

28/02/78 1  1059  91.1  U O O A C Y N 2202         0.6   0.6 1       REPLACE DEFECTIVE TUBE IN WINDSHIELD    567(S-1)
                                                                    WIPER ASSY. EPR FB-567(S-1)

PARTS 2549865             GP=000012202 NO=01 LIFE=931.3 TUBE FOR WINDSHIELD WIPR

28/02/78 1  1060 092.0A S O O A M N N 1801  00.0  00.6  00.6 2  00.0 REMOVED ROLLOVER PROTECTION SYSTEM EPR   824.
                                                                    FB-824.

28/02/78 1  1060 092.0B S O O A M N N 2201  00.0  00.6  00.6 1  00.0 REMOVED CANVAS CAB REMOVE CAB FRAME      824
                                                                    REMOVED MIRRORS AND BRACKETS EPR FB-824

01/03/78 1 01060 093.0  S C C A M Y N 1806  00.0  00.1  00.1 1  00.0 REPLACED HANDLE ON SEAT SUSPENSION AIR   830
                                                                    CONTROL ASSEMBLY. EPR FB-830

PARTS 0F39257             GP=    011806 NO=01 LIFE= UNK  HANDLE,SEAT SUSPENSION CONTROL ASSEMBLY-OPERATOR SEAT

01/03/78 1 01060 093.0A S C C A M Y N 1201  00.0  00.1  00.1 1  00.0 REPLACED HANDLE ON PARKING BRAKE HAND    749,831
                                                                    CONTROL VALVE EPR FB-749,831

PARTS AC-25079            GP=    011206 NO=01 LIFE= UNK  HANDLE, HAND CONTROL VALVE, PARKING BRAKES, COCKPIT,

19/04/78    01080 094.0  U F F A   Y Y 2408         8.0  12.0 2       REMOVED, WELDED SKIN CRACK, AND          998
                                                                    REINSTALLED HYDRAULIC RESERVOIR. EPR
                                                                    FB-998
CRITICALITY FACTOR= 1.00

18/04/78    01080 094.0A U C C A   N N 1802         0.2   0.2 1       REINSTALLED ENGINE SIDE COVER            999
                                                                    ASSEMBLIES WITH NEW BOLTS AND WASHERS.
                                                                    EPR FB-999

PARTS 17C-16H             GP=000011802 NO=10 LIFE=       SCREW, CAP
      27E-6H                 000011802    10             WASHER, FLAT
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,939
 D        S OHP   A     T S E E T Q A C   G  CD     CH     MH     M OT                                 E
 A        H DON   C     A / C C M A M S   R  OL     LO     AO     E IT                                 P
 T        F OUD   T     S U H H '   T F   P  NY     OU     NU     N AM                                 R
 E        T HRS   N     K     R S            T      CR     R        GE                                 S
                                                    KS                  DESCRIPTION

19/04/78    01080 094.0B U C C A    N N 2402         0.1    0.1 1        INSTALLED CLEVIS PIN. EPR FB-999          999

PARTS 2549002              GP=000012402 NO=01 LIFE=        PIN CLEVIS

19/04/78    01080 094.0C U C C A    Y N 0609         0.1    0.1 1        REPLACE BULB IN BLACKOUT STOP LIGHT.      999
                                                                       EPR FB-999

PARTS MS15570-1251         GF=000010609 NO=01 LIFE=        LAMP INCANDESENT

19/04/78    01080 094.0D U C C A    N N 1802         0.2    0.2 1        REINSTALLED BOLT IN BATTERY BOX BRACE     999
                                                                       EPR FB-999

19/04/78    01080 094.0E U C C A    Y N 1503         0.1    0.1 1        REPLACE SAFETY PIN IN PINTLE HOOK. EPR    999
                                                                       FB-999

PARTS 770                  GP=000011503 NO=01 LIFE=        PIN, COTTER

19/04/78    01080 094.0F U O O A    Y Y 2406         0.3    0.3 1        TIGHTENED FITTINGS AT ACCUMULATOR EPR     999
                                                                       FB-999

19/04/78     1080 094.0G U C C A    Y Y 1311         2.0    2.0 1        REPLACED LEFT AND RIGHT DOLLY WHEEL       1000
                                                                       TIRES. EPR FB-1000
CRITICALITY FACTOR= 1.00

PARTS 1794816              GF=    011311 NO=02 LIFE=        TIRE, DOLLY WHEEL

19/04/78 1  1080 094.0H U F O A M Y Y 1100         0.3    0.3 1        REPLACED PLANETARY COVER. EPR FB-1002     1002

PARTS 125408               GP=000011100 NO=01 LIFE=        COVER-PLANET

19/04/78    01080 094.0I U C C A    Y N 2406         0.3    0.3 1        REPLACED DOLLY WHEEL HYDRAULIC GLOBE      765,999
                                                                       VALVE HANDLE. EPR FB-765,999

PARTS UNK                  GP=000012406 NO=01 LIFE=        HANDLE, GLOBE VALVE

09/05/78     1140 035.0  U O O A M N N 2202  00.0  01.3   01.3 1  00.0 REPLACED REAR VIEW MIRRORS AND            824(S-1)
                                                                       BRACKETS. EPR FB-824(S-1)

PARTS 17C514H              GP=000012202 NO=04 LIFE=        BOLT
      17C516H                 000012202    06              BOLT
      2543228                 000012202    08              BRACKET,MIRROR
      25E-15H                 000012202    20              WASHER
      59D-5H                  000012202    14              NUT
      2544108                 000012202    02              MIRROR ASSY
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,940
D          S OHR    A     T S E E T Q A C    G  CO     CH     MH    M OT                                          E
A          H OON    C     A / C C M A M S    R  OL     LO     AO    E IT                                          P
T          F OUD    T     S U H H *   T F    P  NY     OU     NU    N AM                                          R
E          T HRS    N     K     R S             T      CR     R       GE                                          S
                                                       KS                   DESCRIPTION

28/09/77 1 405.8 008.0  S C C A M Y N 0000            0.1    0.1 1         PERFORMED 50 HOUR MAINTENANCE EPR         1075
                                                                         FB-1075

04/10/77 2 471.2 009.0  U O O A M N N 0801  00.0  00.3  00.3 1  00.0 REMOVE CRUSHED TRANSFER CASE COVER (IT   230
                                                                     WAS DAMAGED BY THE GRADER MOLD BOARD
                                                                     HITTING IT) EPR FB-230

04/10/77 2 471.2 009.0A U O O A M Y Y 1208  00.0  00.3  00.3 1  00.0 AN OPERATOR DAMAGED THE AIR MANIFOLD      232
                                                                     AND BROKE AN AIR LINE. WITH THE GRADER
                                                                     MOLD BOARD (BOTH MANUALS GIVE NO INFO
                                                                     ON MANIFOLD OR LINES) - THE MANIFOLD
                                                                     WAS DISCONNECTED + STORED ON THE GRADER
                                                                     - THE DUST COVER WAS PUT OVER THE
                                                                     MANFOLD SECTION OF THE P.S. - THE MTSP
                                                                     DOES NOT INCLUDE THE NEEDED HOSE ASSY
                                                                     EPR FB-232

05/10/77 2 482.1 010.0  U O O I M Y Y 2406  00.0  01.5  01.5 1  00.0 STEERING CYLINDER STEEL HYDR. LINE        231
                                                                     REPLACED BY A FLEXIBLE LINE EPR FB-231
CRITICALITY FACTOR= 1.00

11/10/77 2 502.9  10.1  S O O A M Y N 0000  00.0  00.3  00.6 2  00.0 COMPLETED 500 HOUR MAINTENANCE. EPR       1078
                                                                     FB-1078

PARTS 569022-03           GP=000040801 NO=01 LIFE=       VENT ASSY, BREATHER, TRANSFER CASE
      569022-03              000041000    01             VENT ASSY, BREATHER, AXLE
      AC43887                000041204    01             FILTER ELEMENT, FL, POWER CLUSTER

14/10/77 1 521.4  10.1A U O O A M Y N 1208   0.0   0.5   0.5 1   0.0 REPLACED BROKEN AIR MANIFOLD FITTING      232(S-1)
                                                                     AND RECONNECTED AIR LINE.EPR
                                                                     FB-232(S-1)

PARTS UNK                 GP=000041208 NO=    LIFE=471.2 FITTING, AIR MAINFOLD

14/10/77 1 521.4  10.1C U O O A M N N 0801          .7    .7 1          REINSTALLED AIR CYLINDER AND DISCONNECT   230(S-2)
                                                                     LEVER FORK ASSY. STRAIGHTENED AND
                                                                     REINSTALLED DISCONNECT LEVER COVER. EPR
                                                                     FB-230(S-2)

14/10/77 1 521.4 010.2  U F O A C Y N 1202  00.0  00.5  00.5 1  00.0 INSTALLED NEW SERVICE DISC BRAKE AND      81(S-1)
                                                                     NEW BRAKE PADS EPR FB-81(S-1)

PARTS 5207052             GP=003041202 NO=01 LIFE=UNK    DISC BRAKE, SERVICE
      99-06750               000041202    01      UNK    PAD, BRAKE
      99-06751               000041202    01      UNK    PAD, BRAKE
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,940
D        S OHR   A      T S E E T Q A C   G  CO     CH     MH     M DT                                        E
A        H DON   C      A / C C M A M S   R  OL     LO     AO     E IT                                        P
T        F OUD   T      S U H H '  T F    P  NY     OU     NU     N AM                                        R
E        T MRS   N      K    R S             T      CE      R       GE                                        S
                                                    KS                       DESCRIPTION

22/10/77 2 602.7 016.0  S C C A M Y N 0000          0.3    0.3 1        PERFORMED 50 HR. MAINTENANCE PER LUBE    1080
                                                                     ORDER L05- -204-12. EPR FB-1080

22/10/77 2 602.7 016.0A U O O I M N N 0613  0       0.5    0.5 1  0     REPAIR WIRING CONNECTOR-PULLED LOOSE     1104
                                                                     WHILE UNCOUPLING EPR FB-1104

22/10/77 2 602.7 016.0B U C C A M Y N 0609  00.0  00.2   00.2 1  00.0 REPLACED LEFT SEALED BEAM HEADLIGHT EPR  1105
                                                                     FB-1105

PARTS 4880                 GP=000040609 NO=01 LIFF=UNK   LAMP, SEALED BEAM

25/10/77 1 607.9 017.0  U C C A M N N 1313  00.0  00.4   00.4 1  00.0 REINFLATED LEFT FRONT TIRE ON GRADER
                                                                     WORK SECTION.

26/10/77 2 627.7 018.0  U O O A M Y N 1414  00.0  01.3   02.6 2  00.0 REMOVE TEMPORARY STEERING LINE HOSE +    231(S-1)
                                                                     REPLACE WITH METAL STEERING LINE EPR
                                                                     FB-231(S-1)

27/10/77 1 631.1 019.0  U O O A M Y Y 1202  00.0  02.0   03.5 2  00.0 INSTALLED NEW DISC BRAKE ASSEMBLY ON     285(S-1)
                                                                     GRADER W.S. REPLACED AIR HOSE FROM
                                                                     MANIFOLD TO POWER CLUSTER AND HYD. HOSE
                                                                     TO BRAKE EPR FB-285(S-1)
CRITICALITY FACTOR= 1.00

PARTS 5207052              GP=    041202 NO=01 LIFF=048.1 DISC BRAKE, SERVICE
      4F-4MB-6TNS90-23            041208    01      UNK   HOSE ASSY , NM

28/10/77 1 636.6 020.0  U F O A C Y Y 1202  00.0  00.5   00.5 1  00.0 REMOVED DISK BRAKE ASSEMBLY (ITEM 6,     328
                                                                     FIG. 15 OF TM DEP 5- -204-34 + P)
                                                                     SERVICE BRAKE WOULD OVERHEAT AND
                                                                     SEIZE-UNTIL IT WAS ALLOWED TO COOL. EPR
                                                                     FB-328
CRITICALITY FACTOR= 1.00

28/10/77 2 638.6 020.0A U O O A M Y Y 2406  00.0  00.5   00.5 1  00.0 DISCONNECT CRUSHED AIR MANIFOLD + CAP    295(232-2)
                                                                     OFF LINES EPR FB-295(232-2)

29/10/77 1 642.7 021.0  U O O A M Y Y 2407  00.0  00.5   00.5 1  00.0 REPLACED LUBRICATION FITTING ON ROD END  329
                                                                     OF SIDE SHIFT CYLINDER (BOTTOM). ROD
                                                                     EYE WAS TURNED TO PLACE LUBE FITTING ON
                                                                     TOP SIDE. EPR FB-329

PARTS 12H-25               GP=000042407 NO=01 LIFF=      FITTING, LUBRICATION 1/8-28
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,940
D        S OHR   A     T S E E T Q A C  G  CO    CH    MH    M OT                                  E
A        H DON   C     A / C C M A M S  R  CL    LO    AO    E IT                                  P
T        F OUD   T     S U H H '  T F   P  NY    OU    NU    N AM                                  R
E        T MRS   N     K    R S            T     CR    R       GE                                  S
                                                 KS                  DESCRIPTION

29/10/77 1 642.7 021.0A U O O I M N N 7435  00.0  00.5  00.5 1  00.0 REPLACED NUTS ON PIN ASSY PART NO.       330
                                                                   5268434 FOR ROD END OF MOLD BOARD SIDE
                                                                   SHFT CYLINDER. REPLACED PART NO.
                                                                   630-12H NUT, PLAIN, HEXAGON PHOS, CTG,
                                                                   3/4-10 UNC. EPR FB-330

PARTS 590-12            GP=000047435 NO=04 LIFE=UNK   NUT SELF LOCKING, HEXAGON MOLD BOARD CURBSIDE

29/10/77 1 642.7 021.0B U C C I M Y N 7435  00.0  00.5  00.5 1  00.0 WASHED SOIL AND ROCK OUT OF AREA         331(100-1)
                                                                   BETWEEN SIDESHIFT CYLINDER AND CYLINDER
                                                                   GUARD, UNIT OPERATIONAL EPR
                                                                   FB-331(100-1)

29/10/77 1 642.7 021.0C U O O A C Y N 1202  00.0  02.0  02.0 1  00.0 REINSTALLED SERVICE DISC BRAKE REPLACED  328(S-1)
                                                                   BRAKE PAD RECONNECTED AIR LINES EPR
                                                                   FB-328(S-1)

31/10/77 1 650.8 022.0  S C C A M Y N 0474        0.3   0.5 2       REVERSED END BITS ON MOLDBOARD ASSY.      332
                                                                   EPR FB-332

31/10/77 1 650.8  22.0A U O O A M Y N 2406         .3    .3 1       REPLACED AIR MANIFOLD EARLIER REMOVED     295(S-1)
                                                                   (ON 29 OCT). EPR FB-295(S-1)

PARTS 2548234           GP=   041208 NO=01 LIFE=106.1 AIR MANIFOLD

31/10/77 1 650.8  22.0B S C C A M Y N             0.5   1.0 2       REPLACED BOTTOM BITS ON MOLDBOARD ASSY.   333,334
                                                                   EPR FB-333,334

PARTS 2545319           GP=000047435 NO=02 LIFE=194.1 BIT, END
      MS35465-3            000047435    01      063.7 BIT, BOTTOM, LH
      MS35465-2            000007435    01      063.7 BIT, BOTTOM, RH
      MS35465-2            000047435    01      063.7 BIT, BOTTOM, RH

01/11/77 1 661.9 023.0  U O O A M Y Y 2406  00.0  00.3  00.6 2  00.0 LOCK KEY ON HYDRAULIC MANIFOLD SHEARED   337
                                                                   OFF. REPLACED ASSEMBLY. EPR FB-337

PARTS 2549011           GP=000042406 NO=01 LIFE=      HYDRAULIC MANIFOLD ASSEMBLY ROADSIDE BELOW COCKPIT

02/11/77 1 672.2 024.0  U O O I M Y Y 1000  00.0  00.5  01.0 2  00.2 REMOVED YOKE AND YOKE ASSY AND           338
                                                                   INSPECTED THREADS ON TIE ROD NO DAMAGE
                                                                   NOTED. PARTS WERE CLEANED AND REPLACED.
                                                                   CLARK SITE REP. SUGGESTED CAMBER BE SET
                                                                   AT 1/8 INCH. EPR FB-338 NOTHING COULD
                                                                   BE DETERMINED ABOUT MOVEMENT IN PINS
                                                                   AND BUSHINGS. MAINTENANCE MANUALS DO
                                                                   NOT INCLUDE WEAR DATA.

CRITICALITY FACTOR= 1.00
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,940
 D        S OHR   A     T S E E T Q A C   G  CD     CH     MH     M DT                                    E
 A        H DON   C     A / C C M A M S   R  OL     LO     AO     E IT                                    P
 T        F OUD   T     S U H H '   T F   P  NY     OU     NU     N AM                                    R
 E        T MRS   N     K     R S            T      CR     R        GE                                    S
                                                    KS                    DESCRIPTION

05/11/77 2 700.9 025.0  S C C A M Y N 0000          0.5    1.0 2          PERFORMED 50 HR MAINTENANCE EPR FB-1077  1077

08/11/77 1 709.6 027.0  U F O A M Y Y 1202  00.0  00.3  00.3 1  00.0 REMOVED SERVICE BRAKE ASSY EPR FB-343     343
CRITICALITY FACTOR= 1.00

PARTS 5207052           GP=000041202 NO=01 LIFE=064.5 SERVICE BRAKE DISC AND COMPONENTS.

08/11/77 2 709.6 028.0  S C C A M Y N 7435  00.0  00.5  01.5 3  00.0 REPLACE BOTH CUTTING EDGES EPR FB-387     387

PARTS MS35465-3         GP=000047435 NO=01 LIFE=056.3 BIT, BOTTOM L. H.
      MS35465-2            000047435    01      056.3 BIT, BOTTOM R. H.

14/11/77 2 772.5 029.0  U C C A M Y N 1000  00.0  00.2  00.2 1  00.0 REPLACED BROKEN LUBRICATION FITTING ON    395
                                                                      THE TIE ROD END (ROADSIDE) EPR FB-395

PARTS 10H-25            GP=000041000 NO=01 LIFE=UNK   FITTING LUBRICATION

14/11/77 2 772.5 029.0A S C C A M Y N 7435  00.0  00.7  01.4 2  00.0 REPLACED L. H. + R. H. BOTTOM BITS EPR    396
                                                                      FB-396

PARTS MS35465-3         GP=000047435 NO=01 LIFE=062.9 BIT-BOTTOM L. H.
      MS35465-2            000047435    01      062.9 BIT-BOTTOM R. H.

14/11/77 2 772.5 029.0B U C C A M Y N 0609  00.0  00.3  00.3 1  00.0 REPLACED CURBSIDE SERVICE LIGHT EPR       397
                                                                      FB-397

PARTS 4880              GP=   040609 NO=01 LIFE=772.5 LAMP, SERVICE LIGHT, CURBSIDE

16/11/77 1 792.4 030.0  U O O A M Y Y 1208  00.0  00.5  00.5 1  00.0 REPLACED AIR MANIFOLD HANDLE WITH         399
                                                                      DETENT KEY NOTE: AIR MANIFOLD WAS
                                                                      REPLACED AT 655.8 ENGR. HRS. THE ENTIRE
                                                                      MANIFOLD ASSEMBLY WOULD HAVE BEEN
                                                                      REPLACED HAD ONE BEEN AVAILABLE. EPR
                                                                      FB-399

PARTS UNK               GP=   041208 NO=01 LIFE=136.6 AIR MANIFOLD HANDLE & LOCKING ASSY

17/11/77 1 793.0 030.1  S O O A M Y N 0000        00.4  00.8 2  00.0 COMPLETED 250 HR. MAINT EPR FB-1079       1079

PARTS 569022-03         GP=000040801 NO=01 LIFE=290.1 VENT ASSY, BREATHER, TRANSFER CASE
      569022-03            000041000    01      290.1 VENT ASSY, BREATHER, AXLE
      AC43887              000041204    01      290.1 FILTER ELEMENT, FL, POWER CLUSTER
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03/05/79
MAINTENANCE TASK LOG    TEST_,FAMECE1 TEST ITEM ,940
 D         S OHR    A     T S E E T Q A C   G  CD      CH      MH     M OT                                        E
 A         H DCN    C     A / C C M A M S   R  OL      LO      AO     E IT                                        P
 T         F OUD    T     S U H H *   T F   P  NY      OU      NU     N AM                                        R
 E         T MRS    N     K     R S            T       CR      R        GE                                        S
                                                       KS                   DESCRIPTION

 19/11/77 2 808.6 031.0  U F F I M Y Y 2402  00.0  01.0  02.0 2  00.0 REPAIR DEFECTIVE HYDRAULIC MANIFOLD        654
                                                                      LOCKING PIN EPR FB-654
CRITICALITY FACTOR= 1.00

 19/11/77 1 809.4 032.0  U O O A M Y Y 2403  00.0  00.3  00.3 1  00.0 RETHREADED AND REINSTALLED. CONTROL ROD    655
                                                                      FOR RAISING MOLD BOARD EPR FB-655

 09/12/77 2 848.6 033.0  U F F A M Y Y 0801  00.0  03.0  07.5 2  01.0 REPAIRED TRANSFER CASE ASSEMBLY EPR        657
                                                                      FB-657
CRITICALITY FACTOR= 1.00

 PARTS 2549807              GP=000040801 NO=01 LIFE=UNK   ROD ASSEMBLY, DISS
       415425                  000040801    01      UNK   SEAL, OIL
       3-L-20                  000040801    01      UNK   BEARING, BALL, ANLR
       61D-08H                 000040801    02      UNK   NUT, PLAIN, HEXAGON
       24E-06H                 000040801    08      UNK   WASHER, LOCK
       1310979                 000040801    01      UNK   SPACER
       2449921                 000040801    01      UNK   SPRING
       2549806                 000040801    01      UNK   INSERT
       1315543                 000040801    01      UNK   BUSHING
       2549808                 000040801    01      UNK   BLOCK
       2549795                 000040801    01      UNK   FORK ASSEMBLY
       17C-816H                000040801    02      UNK   SCREW, CAP, HEX HEAD
       17C-608H                000040801    06      UNK   SCREW, CAP, HEX HEAD
       2547226                 000040801    01      UNK   BRACKET
       1F416                   000040801    01      UNK   PIN, COTTER
       17C-616H                000040801    02      UNK   SCREW, CAP, HEX HEAD
       27E-8H                  000040801    02      UNK   WASHER, LOCK
       2547156                 000040801    01      UNK   PIN CLEVIS
       V-7                     000040801    01      UNK   CYLINDER, SINGLE ACTING

 09/12/77 1 855.6 034.0  U O O I M Y Y 2402  00.0  00.3  00.6 1  00.3 ADJUSTED BOLT ON TOP OF HYDRAULIC          466
                                                                      MANIFOLD EPR FB-466

 12/12/77 1 863.3 035.0  U C C A M Y Y 1208  00.0  00.8  01.6 2  00.1 APPLIED HEAT TO AIR MANIFOLD TO MELT       575
                                                                      ICE AND RESEAT THE MANIFOLD. EPR FB-575

 17/12/77 2 889.2 036.0  U F O A M N N 1202  00.0  00.7  00.7 1  00.0 REMOVED SERVICE BRAKE ASSEMBLY EPR         343(S-4)
                                                                      FB-343(S-4)
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,940
 D        S OHR   A    T S E E T Q A C   G  CO     CH     MH    M DT                                          E
 A        H DON   C    A / C C M A M S   R  OL     LO     AO    E IT                                          P
 T        F OUD   T    S U H H '   T F   P  NY     OU     NU    N AM                                          R
 E        T HRS   N    K     R S            T      CR     R       GE                                          S
                                                   KS                     DESCRIPTION

07/01/78 2 911.7 037.0  U F F A C N N 7440  00.0  00.5  00.5 1  00.0 REWELDED BALL JOINT TO SCARIFIER SHAFT    513
                                                                     EPR FB-513

07/01/78 2 911.7 037.0A U F O A C N N 2407  00.0  01.3  02.6 2  00.0 REPLACED SCARIFIER HYDRAULIC CYLINDER     513
                                                                     EPR FB-513

PARTS 2545513            GP=000042407 NO=01 LIFE=UNK   CYLINDER ASSEMBLY

07/01/78 2 912.3 038.0  U O O A C Y N 1202  00.0  01.0  02.0 2  00.0 REINSTALLED DISC BRAKE ASSEMBLY AND      343(S-1)
                                                                     MOUNTING BRACKETS EPR FB-343(S-1)

09/01/78 2 912.3 036.0A U F O A C N N 1208  00.0  00.5  00.5 1  00.0 REMOVED GLAD HAND FROM AIR RESERVOIR     520
                                                                     AND PLUGGED HOLE EPR FB-520

09/01/78 2 912.7 039.0A S O O A M Y N 7440  00.0  00.4  01.2 3  00.0 REPLACE SCARIFIER BITS (REMOVED OLD      521
                                                                     BITS) EPR FB-521

PARTS 5238991            GP=000047440 NO=11 LIFE=912.7 BIT

09/01/78 2 913.4 040.0  U F O I C Y Y 1208  00.0  00.5  00.5 1  00.0 REPLACED HOSE FROM AIR MANIFOLD TO       522
                                                                     MIDMOUNT AIR VALVE. EPR FB-522

PARTS UNKNOWN            GP=000041208 NO=01 LIFE=UNK   HOSE ASSEMBLY

10/01/78 2 914.3 041.0  U F F A C Y N 1202  00.0  00.7  01.4 2  00.0 ADJUSTED CLEARANCE OF SERVICE BRAKE      343(S-2)
                                                                     DISC PADS. EPR FB-343(S-2)

11/01/78 1 914.3 042.0  U O O A M Y Y 1201  00.0  00.2  00.2 1  00.1 ADJUSTED PARKING BRAKE ASSEMBLY AND      537
                                                                     REPLACED LOCK NUT ON ASSEMBLY
                                                                     ADJUSTMENT BOLT. EPR FB-537

PARTS UNK                GP=000041201 NO=01 LIFE= UNK  LOCK NUT

11/01/78 1 914.5  42.0A S O C A M Y N 0000        00.4  01.2 3       PERFORMED 50 HR MAINTENANCE PER LUBE     538
                                                                     ORDER LO5-3840-204-12. EPR FB-538

12/01/78 1 916.1 043.0  U O O A M Y N 0801  00.0  00.3  00.3 1  00.0 REINSTALLED COVER ON DISCONNECT LEVER    522(S-1)
                                                                     EPR FB-522(S-1)

13/01/78 1 927.9 044.0  U O O I M Y Y 1208  00.0  00.2  00.2 1  00.1 REPLACED LOWER ADAPTER ON AIR MANIFOLD    542
                                                                     EPR FB-542

PARTS 8M-8JMS            GP=000041208 NO=01 LIFE= UNK  ADAPTER, AIR MANIFOLD CURBSIDE FORWARD OF COUPLER.
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,940
U          S OHR   A    T S E E T Q A C   G  CD     CH     MH    M DT                                         E
A          H DON   C    A / C C M A M S   R  OL     LO     AO    E IT                                         P
T          F OUD   T    S U H H '   T F   P  NY     OU     NU    N AM                                         R
E          T MRS   N    K     R S            T      CR     R      GE                                          S
                                                    KS                 DESCRIPTION

13/01/78 1 930.1 045.0  S C C A M Y N 7435  00.0  00.7  01.4 2  00.0 REPLACED LEFT AND RIGHT HAND CUTTING       543
                                                                     EDGES EPR FB-543

PARTS MS-35465-3          GP=000047435 NO=01 LIFE=158.1 BIT-BOTTOM-LH
      MS-35465-2             000047435    01      158.1 BIT-BOTTOM-RH

16/01/78 2 947.9 046.0  S C C A M Y N 7435  00.0  01.4  02.8 2  00.0 REPLACED WORN OUT L.H. + R.H. BOTTOM       547
                                                                     CUTTING BITS EPR FB-547

PARTS MS35463-3           GP=000047435 NO=01 LIFE=020.0 BIT, BOTTOM L.H.
      MS35463-2              000047435    01      020.0 BIT, BOTTOM R.H.

18/01/78 2 955.0 047.0  U O F A C Y Y 7435  00.0  06.9  07.4 2  00.0 WELD CRACK IN MOLD BOARD - REMOVED AND     557(S-1)
                                                                     RE-INSTALL BOTH CUTTING EDGES EPR
                                                                     FB-557(S-1)
CRITICALITY FACTOR= 1.00

23/01/78 1 962.4 048.0  U O O A M N N 7440  00.0  00.5  00.5 1  00.0 FABRICATED AND REPLACED U-BOLT ON          577(S-2)
                                                                     SCARIFIER SHANK EPR FB-577(S-2)

PARTS 2545580             GP=000047440 NO=01 LIFE=UNK   U-BOLT

23/01/78 1 962.4 048.0A U O O A M Y Y 1411  00.0  00.8  01.6 2  00.0 REPLACED HYDRAULIC TUBE TO STEERING        577(S-1)
                                                                     CYLINDER EPR FB-577(S-1)

PARTS 2544249             GP=000041411 NO=01 LIFE=UNK   TUBE ASSEMBLY

27/01/78 2 985.9 049.0  U F F A C Y Y 7435  00.0  07.7  08.9 2  00.0 WELDED CRACK IN MOLDBOARD EPR              622(557-1)
                                                                     FB-622(557-1)
CRITICALITY FACTOR= 1.00

06/02/78 1 996.4 050.0  U C C A M Y N 7435  00.0  00.7  02.0 3  00.0 REMOVED AND INSTALLED NEW CUTTING EDGE     710
                                                                     ON MOLDBOARD. EPR FB-710

PARTS MS35465-3           GP=000047435 NO=01 LIFE=048.5 BIT-BOTTOM-LH
      MS35465-2              000047435    01      048.5 BIT-BOTTOM-RH

08/02/78 1 01001  50.1  S O O A M Y N             3.4   5.6 3       PERFORMED 1000 HR MAINTENANCE PER LU3      916
                                                                     ORDER L05-3840-204-12. EPR FB-916

PARTS 569022-03           GP=000040801 NO=01 LIFE=208.0 VENT ASSY, BREATHER, TRANSFER CASE
      569022-03              000041000    01      208.0 VENT ASSY, BREATHER, AXLE
      AC43887                000041204    01      208.0 FILTER ELEMENT, FL, POWER CLUSTER
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,940
 D        S OHR   A    T S E E T Q A C   G  CO     CH     MH     M OT                                   E
 A        H DON   C    A / C C M A M S   R  OL     LO     AO     E IT                                   P
 T        F OUD   T    S U H H *   T F   P  NY     OU     NU     N AM                                   R
 E        T MRS   N    K     R S            T      CR     R        GE                                   S
                                                   KS                     DESCRIPTION

17/02/78 1 01017 051.0  U C C A M Y N 7435  00.0  00.3  00.6 2  00.0 REPLACED LEFT AND RIGHT HAND BOTTOM     740
                                                                     BITS EPR FB-740

PARTS MS35465-3              GP=000047435 NO=01 LIFE=020.0 BIT, BOTTOM, LEFT HAND
      MS35465-2                 000047435    01      020.0 BIT, BOTTOM, RIGHT HAND

18/02/78 2 01034 052.0  U O O A M Y Y 2406  00.0  00.7  02.1 3  00.0 REMOVE HYDRAULIC ELBOW FROM GRADER      776
                                                                     W.S.T950 AND INSTALL IN GRADER W.S.T940
                                                                     EPR FB-776

21/02/78 1 01035 053.0  U O O A M Y Y 2406  00.0  00.5  00.5 1  00.0 REMOVED HOSE ASSEMBLY AND REPLACED      766
                                                                     FITTING AND REINSTALLED HOSE ASSEMBLY.
                                                                     EPR FB-766

PARTS 727-20-20              GP=    042406 NO=01 LIFE= UNK  FITTING, HOSE NM HYDRA MANIFOLD

21/02/78 1 01035 053.0A U C C A M Y N 7438  00.0  00.2  00.2 1  00.1 TIGHTENED NUTS ON CAPSCREWS USED IN THE 779
                                                                     DRAWBAR WELDMENT BALL SOCKET. EPR
                                                                     FB-779

21/02/78 1 01036 054.0  U O O A M Y N 2407  00.0  00.5  00.5 1  00.1 DRILL OUT DAMAGED LUBRICATION FITTING,  766
                                                                     RETHREAD HOLE AND INSTALL NEW FITTING.
                                                                     EPR FB-766

PARTS 4758J                  GP=    042407 NO=01 LIFE=UNK   FITTING, LUBRICATION BLADE SIDE SHIFT CYLINDER

22/02/77 2 01048 055.0  S C C A M Y N 7435  00.0  00.8  00.8 1  00.0 REPLACE L. H. AND R. H. BOTTOM BITS EPR 773
                                                                     FB-773

PARTS MS35465-3              GP=000047435 NO=01 LIFE=051.6 LH.BOTTOM BIT
      MS35465-2                 000047435    01      051.6 R H BOTTOM BIT

28/02/78 1  1060 055.1  U O O A M N N 0424  00.0  00.1  00.1 1  00.0 REPLACED STUD IN CIRCLE SIDE SHIFT      823
                                                                     CYLINDER TRUNNION CAP. EPR FB-823

PARTS 2546417                GP=    042407 NO=01 LIFE=UNK   STUD, CIRCLE SIDE SHIFT CYLINDER TRUNNION CAP

02/03/78 2 01060 056.0  S O O A C N N 0801  00.0  00.1  00.1 1  000. INSTALLED RETROFIT KIT TO MANUALLY     833
                                                                     DISCONNECT MID MOUNT BEARING, 2
                                                                     WASHERS, 1 NUT 1 PIECE OF TUBING EPR
                                                                     FB-833
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03/05/79
MAINTENANCE TASK LOG     TEST ,FAMECE1 TEST ITEM ,940
 D          S OHR   A     T S E E T Q A C   G  CD     CH     MH     M OT                                E
 A          H DON   C     A / C C M A M S   R  OL     LO     AO     E IT                                P
 T          F OUD   T     S U H H '   T F   P  NY     OU     NU     N AM                                R
 E          T MRS   N     K     R S            T      CR     R        GE                                S
                                                      KS                       DESCRIPTION
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 18/04/78    01080 057.0  U F F A    Y Y 7438           0.6    0.6 1        WELDED CRACK ON CIRCLE WELDMENT. EPR      991
                                                                          FB-991
CRITICALITY FACTOR= 1.00
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 26/04/78    01080 057.0A U H H I    Y Y 1501           1.0    1.0 1        REMOVED AND WELDED NEW AIR MANIFOLD AND  131,1003
                                                                          HYDRAULIC MANIFOLD DUMMY BRACKETS ON
                                                                          FRAME. EPR FB-131,1003
CRITICALITY FACTOR= 1.00

 PARTS 2548084              GP=000041501 NO=01 LIFE=        MTG BRACKET, HYD MANIFOLD
       2548083                 000041501    01              MTG BRACKET, AIR MANIFOLD

 26/04/78    01080 057.0B U F F A    Y Y 0801           5.0    5.0 1        REMOVED AND REPLACED DRIVE CHAIN,         1004
                                                                          BEARINGS, AND OIL SEAL IN TRANSFER
                                                                          CASE. EPR FB-1004
CRITICALITY FACTOR= 1.00
-------------------------------------------------------------------------------------------------------------
 PARTS 509263               GP=000040801 NO=01 LIFE=        OIL SEAL
       25K-40616               000040801    01              PACKING, PREFORMED
       3-L-20                  000040801    01              BEARING, BALL, ANLR
       3-L-19                  000040801    01              BEARING, BALL, ANLR
       5209679                 000040801    01              CHAIN, HYVO
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 26/04/78    01080 057.0C U O O A    Y Y 2407           1.8    3.6 2        REMOVED AND REPLACED TWO BLADE LIFT       1005
                                                                          CYLINDERS. EPR FB-1005

 PARTS 2545082              GP=000042407 NO=02 LIFE=        CYL ASSY, ACTG, LIN
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 26/04/78    01080 057.0D U O O A    Y Y 2407           1.1    2.2 2        REMOVED AND REPLACED CIRCLE SIDE SHIFT    1006
                                                                          CYLINDER. EPR FB-1006

 PARTS 2545111              GP=000042407 NO=01 LIFE=        CYLINDER ASSY.

 26/04/78    01080 057.0E U H F A    N N 1004           2.5    2.5 1        REMOVED AND REPLACED FRONT WHEEL          1007
                                                                          BEARINGS ON GRADER WORK SECTION. EPR
                                                                          FB-1007

 PARTS 2546105              GP=000041004 NO=02 LIFE=        OIL SEAL
       658979                  000041004    02              CONE, BEARING
       658994                  000041004    02              CUP, BEARING
       672182                  000041004    02              CONE, BEARING
       672181                  000041004    02              CUP, BEARING
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,941
 D         S OHR   A     T S E E T Q A C    G  CD     CH     MH     M OT                                               E
 A         H DON   C     A / C C M A M S    R  OL     LO     AO     E IT                                               P
 T         F OUD   T     S U H H *   T F    P  NY     OU     NU     N AM                                               R
 E         T MRS   N     K     R S             T      CR      R       GE                                               S
                                                      KS                  DESCRIPTION

03/09/77 2 066.3 001.0  S 0 0 A C N N 1802  00.0  00.2  00.4 2  00.0 INSTALLED WINDSHIELD ASSY

03/09/77 2 066.3 001.0A S 0 0 A C N N 2201  00.0  00.7  00.7 1  00.0 ASSEMBLED + INSTALLED CAB RACK

03/09/77 2 066.3 001.0B S 0 0 A C N N 1801  00.0  00.4  00.8 2  00.0 INSTALLED ROPS

12/09/77 2 074.3 002.0  U O O A C Y Y 1201  00.0  00.2  00.2 1  00.0 ADJUSTED PARKING BRAKE. THE LOCK NUT     113
                                                                     CAME LOOSE. ALLOWING THE PARKING BRAKE
                                                                     TO LOSE ITS ADJUSTMENT EPR FB-113

15/09/77 1 097.6 003.0  U F O A C Y Y 0708  00.0  01.8  03.8 4  02.6 CHECK ELECTRICAL CIRCUITS ASSOCIATED     141(17-2)
                                                                     WITH ELECTRIC CONTROL VALVE. CHECKED
                                                                     TRANSMISSION HYDRAULIC PRESSURE.
                                                                     DETERMINED NEUTRAL SOLENOID TO BE
                                                                     FAULTY REMOVED AND REPLACED FAULTY
                                                                     SOLENOID. DAMAGED "O" IN VALVE BODY OF
                                                                     SOLENOID COULD HAVE BEEN CAUSE OF
                                                                     MALFUNCTION. DEP-5-201-348P, B-186, FIG
                                                                     78 EPR FB-141(17-2)
CRITICALITY FACTOR= 1.00

 PARTS 236402            GP=   010708 NO=01 LIFE=       SOLENOID, NEUTRAL

15/09/77 2 097.7 004.0  S C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GALLON OF OIL TO THE
                                                                     TRANSMISSION

16/09/77 1 102.8 005.0  S C C A M Y N 0000         0.4   0.8 2     0 CONDUCTED 50 HOUR MAINTENANCE ADDED     1071
                                                                     APPROX. 150 ML TO POWER SECTION MASTER
                                                                     CYLINDER RESERVOIR CHECKED TACH;
                                                                     POSSIBLE FAULTY SENDING UNIT. EPR
                                                                     FB-1071

16/09/77 2 107.9 006.0  U C C A M Y N 2202  00.0  00.2  00.2 1  00.0 TIGHTEN PANTOGRAPH RIVNUT ON WINDHIELD   158
                                                                     WIPER. WIPER WOULD NOT OPERATE. EPR
                                                                     FB-158

21/09/77 2 127.3   7.0  U O O A M Y Y 0106         1.6   3.2 2         REINSTALLED ALTERNATOR BELTS ON 19     154
                                                                     SEPT. BELTS WOULD NOT STAY IN PLACE.
                                                                     REPLACED BELTS ON 21 SEPT. (1.0 HR X2
                                                                     MEN) EPR FB-154
CRITICALITY FACTOR= 1.00

 PARTS 217695            GF=000010601 NO=02 LIFE=       BELT, ALTERNATOR
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,941
D          S OHR   A     T S E E T Q A C   G  CO    CH     MH    M UT                                   E
A          H DON   C     A / C C M A M S   R  OL    LO     AO    E IT                                   P
T          F OUD   T     S U H H '   T F   P  NY    OU     NU    N AM                                   R
E          T MRS   N     K     R S            T     CR     R       GE                                   S
                                                    KS                      DESCRIPTION

23/09/77 1 146.4 008.0  S C C A M Y N 0000  00.0   1.1  02.2 2  00.0 50 HOUR MAINTENANCE ADDED 300 ML BRAKE     1072
                                                                   FLUID TO RESERVOIR ADDED 175 ML OIL TO
                                                                   MIDMOUNT BEARING. EPR FB-1072

24/09/77 1 158.8 009.0  U O O A C N N 2407  00.0  00.3  00.3 2  00.0 INSTALLED DOLLY WHEEL CUT-OFF VALVES      191
                                                                   INTO DOLLY WHEEL CYLINDER CIRCUIT. EPR
                                                                   FB-191

26/09/77 2 169.7 010.0  U O O A M Y Y 0607  00.0  05.0  12.0 3  03.0 REPLACED HEAD LIGHT RELAY SERVICE         171
                                                                   HEADLIGHTS INOPERABLE-FOUND RELAY TO BE
                                                                   FAULTY EPR FB-171
CRITICALITY FACTOR= 1.00

PARTS 2546049            GP=000010607 NO=01 LIFE=UNK    RELAY, HEADLIGHT

27/09/77 1 174.8 011.0  U C C A M Y N 0000  00.0  00.2  00.2 1  00.0 ADDED 1 GALLON HYDRAULIC OIL

28/09/77 1 188.8 012.0  U C C A M Y N 0000  00.0  00.2  00.2 1  00.1 ADDED 1 GALLON HYDRAULIC OIL

28/09/77 1 196.7 013.0  U C C A M Y Y 0000  00.0  00.2  00.2 1  00.0 ADDED 1 GALLON TRANSMISSION OIL EPR       225
                                                                   FB-225

29/09/77 1 203.1 014.0  S C C A M Y N 0000  00.0   0.8   1.6 2       50 HOUR MAINTENANCE. EPR FB-1074          1074

29/09/77 1 203.7 014.0A U C C A M Y N 0000  00.0  00.2  00.2 1  00.0 ADDED 1 GALLON HYDRAULIC OIL ADDED 1
                                                                   GALLON TRANSMISSION OIL ADDED 1 GALLON
                                                                   ENGINE OIL

29/09/77 1 203.7 014.0B U O O A M Y N 1311          0.2   0.2 1       ADJUSTED DOLLY WHEEL BEARINGS. EPR        1113
                                                                   FB-1113

29/09/77 1 203.7 014.0C U O O A M Y Y 1208          0.2   0.2 1       CLEANED AIR TANK DUMP VALVE. EPR          1114
                                                                   FB-1114

30/09/77 2 214.5 014.1  U O O A M Y Y 1201  00.0  00.2  00.2 1  00.0 ADJUSTED PARKING BRAKE EPR FB-220         220

01/10/77 2 227.3 014.2  U H F A M Y Y 1414  00.0  00.8  01.6 2  00.1 NSTALLED A REPAIR KIT IN THE STEERING     401
                                                                   CONTROL VALVE REASON: STEERING VALVE
                                                                   WAS LEAKING DURING OPERATION EPR FB-401
CRITICALITY FACTOR= 1.00

PARTS 996330             GP=000011414 NO=01 LIFE=UNK    REPAIR KIT STEERING CONTROL VALVE
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,941
 D        S OHR    A     T S E E T Q A C    G  CD     CH     MH    M OT                                   E
 A        H DON    C     A / C C M A M S    R  OL     LO     AO    E IT                                   P
 T        F OUD    T     S U H H '   T F    P  NY     OU     NU    N AM                                   R
 E        T MPS    N     K     R S             T      CR     R       GE                                   S
                                                      KS                   DESCRIPTION

01/10/77 2 227.3 014.2A U O O A M N N 1501  00.0  00.2  00.2 1  00.1 STRAIGHTEN HAND RAIL REASON: HAND RAIL    400
                                                                    ON PASSENGER SIDE OF POWER UNIT BENT,
                                                                    OPERATOR HIT A TREE EPR FB-400

04/10/77 1 247.3 014.3  U O O A M Y Y 0106  00.0  01.0  01.0 1  00.3 REPLACED PRESSURE SENDER OIL SENDING     402
                                                                    UNIT WAS BROKEN OFF EPR FB-402

PARTS 5654912          GP=000010106 NO=01 LIFE=UNK     PRESSURE SENDER

04/10/77 2 250.2 014.4  S O O A M Y N 0000  00.0  01.7  03.4 2  00.0 PERFORMED 250 HOUR MAINTENANCE. EPR     1082
                                                                    FB-1082

PARTS MS-35802-3       GP=000010106 NO=02 LIFE=        FILTER ELEMENT, OIL, FULL FLOW
      9311                000010106    02              FILTER ELEMENT, OIL, BYPASS
      5678                000010309    02              CARTRIDGE, FUEL FILTER
      LF-511              000010721    01              FILTER ELEMENT, OIL, TRANSMISSION
      299080              000010508    01              FILTER ELEMENT, WATER, CORROSION RESIST
      AC43887             000011202    01              FILTER ELEMENT, FL, POWER CLUSTER
      569022-03           000010900    01              VENT ASSY, BREATHER, MDMT
      569022-03           000011100    01              VENT ASSY, BREATHER, AXLE
      569020-03           000010700    01              VENT ASSY, BREATHER, TRANSMISSION

04/10/77 2 251.4 015.0  S O O A M Y N 0106  00.0  00.3  00.3 1  00.0 OIL LEAKING FROM HOSE ASSY AT PRESSURE   229
                                                                    SENSOR- ENG. OIL) RE-TIGHTEN THE
                                                                    FITTING ON THE HOSE EPR FB-229

04/10/77 2 251.4 015.0A U O O A M Y Y 1201  00.0  00.5  00.5 1  00.0 ADJUST PARKING BRAKE EPR FB-1069         1069

05/10/77 2 258.2 016.0  U O O A M N N 1201  00.0  00.3  00.3 1  00.0 ADJUST PARKING BRAKE-OUT OF ADJUSTMENT   234
                                                                    EPR FB-234

05/10/77 2 258.2 016.0A U C C A M Y N 0000  00.0  00.3  00.3 1  00.0 ADDED 4 QUARTS OF OIL TO THE
                                                                    TRANSMISSION

05/10/77 2 258.2 016.0B U O O A M Y Y 0609  00.0  00.2  00.2 1  00.0 INSTALL LAMP-IN LEFT SERVICE HEADLIGHT   236
                                                                    TO REPLACE BURNED OUT LAMP EPR FB-236

PARTS 4880             GP=000010609 NO=01 LIFE=UNK     LAMP, SEAL BEAM

06/10/77 2 278.9 016.1  U C C A M Y N 0000  00.0  00.2  00.2 1  00.0 ADDED 3 QUARTS OF OIL TO THE
                                                                    TRANSMISSION
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03/05/79
MAINTENANCE TASK LOG     TEST ,FAMECE1 TEST ITEM ,941
 D          S OHR    A      T S E E T Q A C    G   CO      CH     MH     M DT                                         E
 A          H DON    C      A / C C M A M S    R   OL      LO     AO     E IT                                         P
 T          F OUD    T      S U H H '   T F    P   NY      OU     NU     N AM                                         R
 E          T MRS    N      K     R S              T       CR     R        GE        DESCRIPTION                      S
                                                           KS

08/10/77 2 290.5 016.2  U O O I M Y Y 0312  00.0  01.0  01.0 1  00.3 THROTTLE STUCK IN HIGH IDLE, ADJUSTED      403
                                                                    LINKAGE USING EXISTING JAM NUT, PROPER
                                                                    NORQUE ON THE NUT WILL HOLD THE
                                                                    ADJUSTMENT. THE MANUFACTURE SHOULD
                                                                    DEVISE A MEANS OF LOCKING THE NUT. EPR
                                                                    FB-403

PARTS 13D-05H              GP=000010312 NO=01 LIFE=UNK    NUT, JAM

11/10/77 2 296.2 016.3  U O O Y M N N 0000  00.0  00.1  00.1 1  00.1 ADDED 3 QT TRANSMISSION OIL

12/10/77 2 303.4 016.4  U O O A M N N 0000  00.0  00.1  00.1 1  00.1 ADDED 4 QTS OF TRANSMISSION FLUID

12/10/77 2 303.4 016.4A S C C A M Y N 0000  00.0  00.5  01.0 2  00.0 PERFORMED 50 HR MAINTENANCE PER LUBE      405
                                                                    ORDER LO5-3840-201-12 EPR FB-405

13/10/77 1 315.7 016.5  U O C I   N N 2201  00.0  00.2  00.4 2  00.0 INSTALLED CANVAS CAB ASSEMBLY. (TM DEP
                                                                    5- -201-20, P INADEQUATE- TM STATES THE
                                                                    PERTINENT CANVAS CAB ILLUSTRATIONS FIG
                                                                    2-17C, PAGE 2-80C + FIGURE 132, PAGE
                                                                    C-172 SHALL BE SUPPLIED LATER.)

13/10/77 2 322.8 017.0  U C C A   N N 0000  00.0  00.3  00.3 1  00.0 ADDED 4 QUARTS OF TRANSMISSION OIL

13/10/77 2 322.8 017.0A U C C A   Y N 0000  00.0  00.2  00.2 1  00.0 ADDED 2 QUARTS OF HYDRAULIC OIL

14/10/77 2 334.0 018.0  U O O A M Y N 1400  00.0  00.4  00.8 2  00.8 DRIVER COMPLAINED OF HARD STEERING-THE     1070
                                                                    MECHANIC CHECKED THE STEERING OUT, SAID
                                                                    IT WAS OK + SENT THE DRIVER BACK TO
                                                                    TESTING. EPR FB-1070

14/10/77 2 336.3 019.0  U C C A   N N 0000  00.0  00.2  00.2 1  00.0 ADD 1 GALLON OF TRANSMISSION OIL

15/10/77 2 345.4 020.0  U O O A   Y Y 2406         0.5   0.5 1       CHECK + TIGHTEN HYDRAULIC LINES IN AND   1091
                                                                    AROUND THE HYD. PUMP AREA. TRYING TO
                                                                    CORRECT A SMALL HYDRAULIC LEAK IN THE
                                                                    GENERAL AREA OF THE HYD. PUMP. EPR
                                                                    FB-1091

17/10/77 1 351.2 021.0  S C C A M Y N 0000  00.0  00.5  01.0 2  00.0 PERFORMED 50 HR MAINTENANCE PER LUBE      408
                                                                    ORDER LO5-3840-201-12 EPR FB-408
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,941
 D         S OHR    A      T S E E T Q A C    G  CO     CH     MH     M OT                                          E
 A         H DON    C      A / C C M A M S    R  OL     LO     AO     E IT                                          P
 T         F OUD    T      S U H H *   T F    P  NY     OU     NU     N AM                                          R
 E         T HRS    N      K     R S             T      CR     R        GE                                          S
                                                        KS                   DESCRIPTION

17/10/77 1 351.2 021.0A U O O A M Y N 1208  00.0  00.1  00.1 1  00.0 BROKEN GLAD HAND AT TUBE GOING INTO THE  409
                                                                     GLAD HAND. REMOVED TUBING AT UPPER
                                                                     CONNECTION AND CAPPED OFF, SERVICE SIDE
                                                                     EPR FB-409

18/10/77 1 359.8 022.0  U O O A M Y N 1313  00.0  00.4  00.8 2  00.0 INFLATED TWO TIRES TO 55 PSI FROM 40
                                                                     PSI

18/10/77 1 359.8 022.0A U C C A M Y N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 QT OF COOLANT TO THE RADIATOR.

18/10/77 2 373.3 023.0  U C C A M Y N 2202  00.0  00.3  00.6 2  00.0 REMOVE CURBSIDE MIRROR BECAUSE OF        410
                                                                     BROKEN MIRROR SUPPORT YOKE EPR FB-410

19/10/77 1 373.4 024.0  U O O A M Y N 0000  00.0  00.1  00.1 1  00.0 ADDED 6 QTS OF TRANSMISSION FLUID.

19/10/77 1 373.4 024.0A U C C A M N N 1311  00.0  00.4  00.4 1  00.0 INFLATED BOTH DOLLY TIRES TO 90 PSI.

20/10/77 1 386.1 025.0  U C C A M Y N 0000  00.0  00.2  00.2 1  00.0 ADDED 2 GALS. OF HYDRAULIC FLUID.

21/10/77 1 398.6 026.0  S C C A M Y N 0000  00.0  00.7  01.4 2  00.0 PERFORMED 50 HR MAINTENANCE PER LUBE      444
                                                                     ORDE L05-3840-201-12 ADDED 3OZ OF BRAKE
                                                                     FLUID TO THE MASTER CYLINDER AND 5
                                                                     SQUINTS OF OE/HD WAS ADDED TO THE
                                                                     MIDMOUNT BEARING. EPR FB-444

21/10/77 2 409.4 027.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADD 2 QUARTS TO TRANSMISSION

25/10/77 1 428.0 028.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADD1 GAL. OF TRANSMISSION OIL.

25/10/77 1 428.0 028.0A U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GAL OF ENGINE OIL

26/10/77 2 440.9 029.0  S C C A M N N 0609  00.0  00.2  00.2 1  00.0 TIGHTEN BRACKET MOUNTING BOLTS ON        415
                                                                     FLOODLIGHT EPR FB-415

26/10/77 2 443.0 030.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 2 QUARTS OF OIL TO TRANSMISSION

28/10/77 1 455.7 031.0  S C C A M Y N 0000  00.0  00.8  01.6 2  00.0 PERFORMED 50 HR MAINTENANCE PER LUBE      445
                                                                     ORDER L05-3840-201-12. ADDED 1 PINT OF
                                                                     BRAKE FLUID TO THE MASTER CYLINDER. EPR
                                                                     FB-445
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,941
 U          S OHR   A     T S E E T Q A C   G  CO    CH     MH    M OT                                              E
 A          H DON   C     A / C C M A M S   R  OL    LO     AO    E IT                                              P
 T          F OUD   T     S U H H *   T F   P  NY    OU     NU    N AM                                              R
 E          T MRS   N     K     R S            T     CR      R      GE                                              S
                                                     KS                   DESCRIPTION

28/10/77 1 455.7 031.0A S C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GAL OF TRANSMISSION FLUID TO
                                                                      THE TRANSMISSION

28/10/77 1 455.7 031.0B U O O A M Y Y 0607  00.0  01.0  01.0 1  00.0 RED INDICATOR LAMPS WERE REPLACED ON     124,417
                                                                      THE CONVERTER TEMPERATIRE GAUGE, OIL
                                                                      PRESSURE GAUGE, AND WATER TEMPERATURE
                                                                      GAUGE. EPR FB-124,417

PARTS 2547368            GP=000010607 NO=   LIFE=UNK    WARNING LAMP-LEFT HAND INSTRUMENT PANEL

31/10/77 1 478.4 032.0  U C C A M Y N 0000  00.0  00.2  00.2 1  00.0 ADDED 1 GAL OE-10 TO TRANSMISSION

01/11/77 1 492.1 033.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 1 GALLON OE-10 TO TRANSMISSION

01/11/77 2 498.0 034.0  S O O A M Y N 0000  00.0  03.0  03.0 1  00.0 500 HOUR MAINTENANCE EPR FB-420          420

PARTS MS-35802-3         GP=000010106 NO=02 LIFE=247.8 FILTER ELEMENT, OIL, FULL FLOW
      9311                  000010106    02      247.8 FILTER ELEMENT, OIL, BYPASS
      5678                  000010309    02      247.8 CARTRIDGE, FUEL FILTER
      LF-511                000010721    01      247.8 FILTER ELEMENT, OIL, TRANSMISSION
      299080                000010508    01      247.8 FILTER ELEMENT, WATER, CORROSION RESIST
      AC43887               000011202    01      247.8 FILTER ELEMENT, FL, POWER CLUSTER
      569022-03             000010900    01      247.8 VENT ASSY, BREATHER, MDMT
      569022-03             000011100    01      247.8 VENT ASSY, BREATHER, AXLE
      569020-03             000010700    01      247.8 VENT ASSY, BREATHER, TRANSMISSION

04/11/77 1 501.4 035.0  U O O A M Y Y 0710        14.7  16.7 1  08.5 REPLACED 2D& 3D GEAR SOLENOIDS &        421.
                                                                      ELECTRIC CONTROL VALVE. CHECKED FOR
                                                                      LOOSE WIRES (2/11) 5 HRX 1 MAN; CHECKED
                                                                      & REMOVED SOLENOIDS (3/11) 5.5 HR X 1
                                                                      MAN; CHECKED SWITCH (4/11) 2 HR X 2
                                                                      MEN; REPLACED SWITCH (4/11) 0.7 HR X 1
                                                                      MAN; REPLACED SOLENOIDS (4/11) 1.5 HR X
                                                                      1 MAN. EPR FB-421.
CRITICALITY FACTOR= 1.00

PARTS 236402             GP=000010710 NO=02 LIFE=UNK    SOLENOIDS
      2546583               000010608    01       UNK    SWITCH, ELECTRIC CONTROL

04/11/77 2 509.4 036.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADD 2 QUARTS OF OIL TO THE TRANSMISSION
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,941
 D          S OHR    A      T S E E T Q A C    G   CD      CH      MH      M OT                                              E
 A          H OON    C      A / C C M A M S    R   OL      LO      AO      E IT                                              P
 T          F OUD    T      S U H H '   T F    P   NY      OU      NU      N AM                                              R
 E          T MRS    N      K     R S              T       CR      R         GE                                              S
                                                           KS                       DESCRIPTION

07/11/77 1 523.0 037.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.1 ADDED 1/2 GALLON OE-10 OIL TO
                                                                     TRANSMISSION

07/11/77 2 530.3 038.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 4 QUARTS OF OIL TO THE HYDRAULIC
                                                                     TANK

08/11/77 1 537.2 039.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 1 1/2 GALLON OE-10 TO
                                                                     TRANSMISSION

08/11/77 2 544.3 040.0  U O O A M Y Y 1410  00.0  02.0  06.0 3  00.3 CHECK PRESSURE ON STEERING PUMP.          427
                                                                     INCREASE PRESSURE FROM 900 PSI TO 2500
                                                                     PSI. THIS LOW PRESSURE WAS CAUSING HARD
                                                                     STEERING VARIABLE STEERING PUMP
                                                                     PRESSURE COMPENSATOR ADJUSTING TO 2500
                                                                     PSI EPR FB-427
CRITICALITY FACTOR= 1.00

09/11/77 1 550.7 041.0  S C C A M Y N 0000  00.0  01.5  03.0 2  00.0 50 HOUR MAINTENANCE ADDED 3 OZ BRAKE      425
                                                                     FLUID TO MASTER CYLINDER EPR FB-425

09/11/77 1 550.7 041.0A S O O A M Y N 0000  00.0  00.2  00.4 2  00.0 ADDED 9 ML OP LUBRICANT TO MIDMOUNT
                                                                     POWER SECT.

09/11/77 2 564.4 042.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADD 2 QUARTS OF TRANSMISSION OIL

10/11/77 2 578.6 043.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GAL OF TRANSMISSION FLUID TO
                                                                     THE WATER DISTRIBUTOR POWER SECTION
                                                                     DURING POST OPERATION INSPECTION.

11/11/77 1 578.9 044.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GALLON OE-10 TO HYDAULIC
                                                                     RESERVOIR.

11/11/77 1 579.4 045.0  U O O A M Y Y 0710  00.0  02.0  02.0 1  00.5 REPLACED SOLENOID ON ELECTRIC CONTROL     479
                                                                     VALVE EPR FB-479
CRITICALITY FACTOR= 1.00

PARTS 236402            GP=000010710 NO=01 LIFF= 90.1 SOLENOID, ELEC. ELECTRIC CONTROL VALVE

11/11/77 1 579.4 045.0A U O O A M Y Y 1410  00.0  00.5  00.5 1  00.2 ADJUSTED VARIABLE STEER PUMP              427
                                                                     COMPENSATOR ADJUSTMENT PLUG. EPR FB-427
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,941
 D        S OHR    A     T S L L T Q A C    G  CO     CH     MH     M OT                                           E
 A        H DON    C     A / C C M A M S    R  OL     LO     AO     E IT                                           P
 T        F OUD    T     S U H H '   T F    P  NY     OU     NU     N AM                                           R
 E        T MRS    N     K     R S             T      CR     R        GE                                           S
                                                      KS                       DESCRIPTION

11/11/77 1 579.4 045.0B U C C A M Y Y 0608  00.0  00.2  00.2 1  00.5 SWITCH, CAB TURNAROUND, SWITCH WAS        426
                                                                     STUCK , VEHICLE WOULD NOT MOVE IN FWD
                                                                     OR REV. KNOCKED MUD AND DEBRIS OFF
                                                                     SWITCH ARM VEHICLE OPERATIONAL. DEP-5
                                                                     201-20&P PG C-74 FIG. 53 ITEM 28. DID
                                                                     NOT REPLACE. EPR FB-426

12/11/77 1 590.6 046.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 1 GALLON OE-10 TO TRANSMISSION

12/11/77 1 590.6 046.0A U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 1 GALLON OE-10 TO HYDRAULIC
                                                                     SYSTEM

14/11/77 1 601.2 047.0  S C C A M Y N 0000        00.3   0.7 3        50 HR MAINTENANCE ADDED 24 ML OF          428
                                                                     LUBRICANT TO P.S. MIDMOUNT. EPR FB-428

14/11/77 1 601.2 047.0A U C C A M N N 0000  00.0  00.2  00.2 1  00.1 ADDED 1 GALLON OE-10 TO TRANSMISSION

14/11/77 1 601.2 047.0B U O O I M Y Y 0000        01.3  03. 8  3      IT TOOK 3 MEN 1.25 HRS. TO UNCOUPLE THE   429
                                                                     MODULES. EPR FB-429

15/11/77 2 622.4 048.0  A C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 1 GALLON OF OIL TO ENGINE

15/11/77 2 622.4 048.0A S C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 1 GALLON OF OIL TO TRANSMISSION

17/11/77 1 645.5 049.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.1 ADDED 1 GALLON OF OE-10 TO TRANSMISSION
                                                                     SUMP

17/11/77 2 652.8 050.0  U O O A M Y Y 0601  00.0  00.4  00.8 2  00.0 ADJUST 2 LOOSE ALTERNATOR BELTS EPR        430
                                                                     FB-430

17/11/77 2 652.8 050.0A U O O A M Y Y 0106  00.0  00.2  00.2 1  00.0 REPLACE BROKEN PRESSURE SENDER EPR         431
                                                                     FB-431

PARTS 5694912           GP=000010106 NO=01 LIFE=UNK   PRESSURE SENDER

18/11/77 2 667.7 051.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 1 GALLON OF TRANSMISSION OIL

21/11/77 2 712.2 051.1  U O O A M Y Y 0304        00.1  00.1 1  00.0 REPLACED MISSING DUST CAP ON AIR INTAKE   432
                                                                     CLEANER. EPR FB-432

PARTS P 10-9297         GP=000010304 NO=01 LIFE=UNK   DUST CAP ASSY
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,941
D        S OHR   A    T S E E T Q A C   G  CD    CH    MH    M OT                                 E
A        H DON   C    A / C C M A M S   R  OL    LO    AO    E IT                                 P
T        F OUD   T    S U H H '   T F   P  NY    OU    NU    N AM                                 R
E        T MRS   N    K     R S            T     CK    R       GE                                 S
                                                 KS                  DESCRIPTION
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22/11/77 1 712.3 051.2  S C C A M Y N 0000  00.0  00.5  01.0 2  00.0 COMPLETED 50 HOUR MAINTENANCE, EPR      1048
                                                                     FB-1048

23/11/77 1 734.8 052.0  U C C A M Y N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GAL. OF TRANSMISSION FLUID TO
                                                                     THE TRANSMISSION.

29/11/77 1 746.2 053.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.1 ADDED 1 GALLON OE-10 OIL TO
                                                                     TRANSMISSION SUMP.

29/11/77 1 746.2 053.0A U C C A M N N 0000  00.0  00.2  00.2 1  00.1 ADDED 2 GALLONS OE-10 OIL TO HYDRAULIC
                                                                     RESERVOIR

01/12/77 2 747.2 054.0  U O O A M Y Y 0505  00.0  01.1  02.2 2  00.0 REPLACED BROKEN ADJUSTING SCREW ON FAN   434
                                                                     HUB .8HR ADJ FAN BELTS .8HR TIGHTEN (2)
                                                                     CAP. SCREWS 1.4HR EPR FB-434
CRITICALITY FACTOR= 1.00

 PARTS 9948              GP=000010505 NO=01 LIFE=UNK    SCREW, ADJUSTING

01/12/77 2 747.2 054.0A U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 2 QUARTS OF ENGINE OIL

01/12/77 2 747.2 054.0B U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 2 QUARTS OF TRANSMISSION OIL

02/12/77 1 751.1 055.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.1 ADDED 1 GALLON OF OE-30 TO ENGINE

02/12/77 2 751.1 055.0A S O O A M Y N 0000  00.0  02.4  04.1 2  00.0 PERFORMED 250 HR. MAINTENANCE ADDED 32   436
                                                                     QTS ENGINE OIL ADDED 11.2 ML OIL TO
                                                                     MIDMOUNT BEARING. EPR FB-436

 PARTS MS-35802-3        GP=000010106 NO=02 LIFE=253.1 FILTER ELEMENT, OIL, FULL FLOW
       9311                 000010106    02      253.1 FILTER ELEMENT, OIL, BYPASS
       5678                 000010309    02      253.1 CARTRIDGE, FUEL FILTER
       LF-511               000010721    01      253.1 FILTER ELEMENT, OIL, TRANSMISSION
       299080               000010508    01      253.1 FILTER ELEMENT, WATER, CORROSION RESIST
       AC43887              000011202    01      253.1 FILTER ELEMENT, FL, POWER CLUSTER
       569022-03            000010900    01      253.1 VENT ASSY, BREATHER, MDMT
       569022-03            000011100    01      253.1 VENT ASSY, BREATHER, AXLE
       569020-03            000010700    01      253.1 VENT ASSY, BREATHER, TRANSMISSION

03/12/77 1 753.0 055.1  U O O A M Y N 0607  00.0  00.3  00.3 1  00.1 REPLACED DEFECTIVE TURN SIGNAL EPR       446
                                                                     FB-446

 PARTS 2547414           GP=000010607 NO=01 LIFE= UNK   TURN SIGNAL STEERING COLUM
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,941

U A T E	S H F T	OHR DON OUD HRS	A C T N	T A S K	S / U	E C H	E C H R	T M * S	Q A	A M T	C S F	G R P	CD OL NY T	CH LO OU CR KS	MH AO NU R	M E N	DT IT AM GE	DESCRIPTION	E P R S
03/12/77	1	753.0	055.1A		U	O	O	A	M	Y	Y	0607	00.0	00.3	00.3	1	00.0	REPLACED HOURMETER AND CAPACITOR.DID NOT CORRECT PROBLEM.REMOVED HOURMETER ANDCAPACITOR AND INSTALLED A SUBSTITUTE HOURMETER WITH 4-50 VOLT OPERATING RANGE. EPR FB-733	733
05/12/77	2	765.1	056.0		U	C	C	A	M	N	N	0000	00.0	00.2	00.2	1	00.0	ADDED 2 QUARTS TRANSMISSION OIL	
09/12/77	2	778.1	057.0		U	C	C	A	M	N	N	0000	00.0	00.2	00.2	1	00.0	ADDED 1 QUART OF TRANSMISSION OIL	
10/12/77	1	781.0	058.0		U	C	C	A	M	N	N	0000	00.0	00.1	00.1	1	00.0	ADDED 1 GAL. OF TRANSMISSION FLUID.	
12/12/77	1	789.6	059.0		U	C	C	A	M	N	N	0000	00.0	00.1	00.1	1	00.0	ADDED 2 QTS. OF TRANSMISSION FLUID.	
13/12/77	1	805.6	060.0		U	C	C	A	M	N	N	0000	00.0	00.1	00.1	1	00.0	ADDED 1 GAL. OF TRANSMISSION OIL.	
14/12/77	1	811.2	60.1		U	O	O	A	M	Y	N	0700		0.5	1.0	2	1.0	UNSUCCESSFULLY TRIED TO FIND OIL LEAK. EPR FB-590	590
14/12/77	1	816.0	061.0		U	C	C	A	M	N	N	0000	00.0	00.1	00.1	1	00.0	ADDED 1 GAL. OF TRANSMISSION FLUID.	
14/12/77	2	816.0	061.0A		U	O	O	A	M	Y	Y	1208	00.0	00.9	00.9	1	00.0	BRAZED HOLE IN AIR RESERVOIR SUPPLY LINE EPR FB-438	438
15/12/77	1	817.3	061.0B		S	C	C	A	M	Y	N	0000	00.0	00.5	01.0	2	00.0	PERFORMED 50 HOUR MAINTENANCE ADDED 33.6 ML OF OIL TO MIDMOUNT BEARING. EPR FB-439	439
16/12/77	1	818.8	062.0		U	F	F	A	C	Y	Y	0708	00.0	01.5	03.0	2	01.5	CHECKED FLUID LEAKING FROM CONVERTER HOUSING DRAIN HOLE. LEAKAGE 6.03 OUNCES/HOUR. EPR FB-441	441

CRITICALITY FACTOR= 1.00

U A T E	S H F T	OHR DON OUD HRS	A C T N	T A S K	S / U	E C H	E C H R	T M * S	Q A	A M T	C S F	G R P	CD OL NY T	CH LO OU CR KS	MH AO NU R	M E N	DT IT AM GE	DESCRIPTION	E P R S
16/12/77	2	818.8	62.1		U	C	C	A	M	Y	N	0611		0.1	0.1	1		DISCONNECTED HORN. EPR FB-442	442
17/12/77	1	828.8	063.0		U	C	C	A	M	N	N	0000	00.0	00.2	00.2	1	00.1	ADDED 1/2 GALLON OE-30 TO ENGINE SUMP	
17/12/77	1	828.8	063.0B		U	C	C	A	M	N	N	0000	00.0	00.2	00.2	1	00.0	ADDED 2 GALLONS HYDRAULIC FLUID (OE-10) TO RESERVOIR	

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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,941
 D         S OHR    A     T S E E T Q A C    G   CD      CH     MH     M OT                                                   E
 A         H DON    C     A / C C H A M S    R   OL      LO     AO     E IT                                                   P
 T         F OUD    T     S U H H '   T F    P   NY      OU     NU     N AM                                                   R
 E         T MRS    N     K     R S              T       CR     R       GE                                                    S
                                                         KS                   DESCRIPTION

 19/12/77 1 839.2 064.0  U C C A M Y N 0000  00.0  00.2  00.2 1  00.0 ADDED 4 GALLON TRANSMISSION OIL

 20/12/77 1 844.3 065.0  U C C A M Y N 0609  00.0  00.2  00.5 1  00.1 REPLACED LAMP SEAL BEAM, ROAD SIDE EPR     470
                                                                      FB-470

 PARTS 4880              GP=000010609 NO=01 LIFE=UNK   LAMP SEAL BEAM ROADSIDE SERVICE HEAD LIGHT

 20/12/77 1 844.3 065.0A U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 1 GALLON TRANSMISSION FLUID
                                                                      (OE-10) TO SUMP

 21/12/77 1 850.4 065.1  U O O A M Y Y 0000         0.9   2.7 3       DIFFICULTY IN UNCOUPLING. EPR FB-1073    1073

 21/12/77 1 850.4 065.1A U O O A M Y Y 0505  00.0  00.5  01.0 2  00.2 REPLACED LOST CAP SCREW FAN HUB           487
                                                                      ADJUSTING CLAMP EPR FB-487

 PARTS 554316            GP=000010505 NO=01 LIFE=111.1 CAP SCREW FAN HUB

 21/12/77 1 850.4 065.1B S C C A M Y N 0000         0.3   0.9 3       50 HOUR SERVICE. EPR FB-484              484

 21/12/77 1 852.2 066.0A S C C A M N N 0000  00.0  00.2  00.2 1  00.1 ADDED 1 GAL. OE-10 TO TRANSMISSION SUMP

 21/12/77 2 852.2 067.0  S C C Y M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GAL. OF HYDRAULIC FLUID.

 05/01/78 2 859.3 069.0  U O O A M Y Y 0610  00.0  04.0  08.0 2  03.0 REPLACED FEMALE PIN CONNECTOR IN K6       500
                                                                      RELAY TERMINAL BLOCK - ENGINE WOULD NOT
                                                                      START BY USING STARTER BUTTON EPR
                                                                      FB-500
CRITICALITY FACTOR= 1.00

 06/01/78 2 859.3 069.0A U F F A C Y Y 0302  00.0  01.5  03.0 2  00.0 REMOVED LEAKING FUEL PUMP (CRACKED         516
                                                                      HOUSING); ALSO REMOVED SURGE TANK,
                                                                      BRACKETS, LINES, AND HOSES TO REMOVE
                                                                      FUEL PUMP EPR FB-516
CRITICALITY FACTOR= 1.00

 PARTS 204161            GP=000010302 NO=01 LIFE=UNK   PUMP, FUEL

 18/01/78 2 859.3 070.0  U F F A C Y N 0302  144.  10.6  14.4 2  00.0 REPLACED FUEL PUMP (PUMP WAS REPAIRED     516(S-1)
                                                                      BY CUMMINS UNDER WARRANTY) REASSEMBLED
                                                                      AND HOOKED UP ALL LINES- MUFFLER + SIDE
                                                                      PANELS EPR FB-516(S-1)
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,941
 D          S OHR   A      T S E E T Q A C   G  CO     CH     MH     M DT                                       E
 A          H DON   C      A / C C M A M S   R  OL     LO     AO     E IT                                       P
 T          F OUD   T      S U H H '   T F   P  NY     OU     NU     N AM                                       R
 E          T MRS   N      K     R S            T      CR     R        GE                                       S
                                                       KS                    DESCRIPTION

02/02/78 2 868.1 071.0  U O O A M Y Y 0708  00.0  00.1  00.1 1  00.0 REPLACED DETERIORATED PACKING FOR A        642
                                                                     HOSE ASSEMBLY ON THE TANDEM PUMP EPR
                                                                     FB-642

PARTS 58K-219           GP=000010708 NO=01 LIFF=512.2 PACKING, PREFORMED

03/02/78 1 878.6 072.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.1 ADDED 1 1/2 GALLON OF TRANSMISSION
                                                                     FLUID

03/02/78 2 879.8 073.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 2.5 GALLONS OF HYDRAULIC OIL

03/02/78 2 879.8 073.0A U O O A M Y Y 2406  00.0  00.7  01.4 2  00.0 REPLACED DAMAGED PREFORMED PACKING ON       704(642-1)
                                                                     METAL TUBE ASSEMBLY CONNECTING TO THE
                                                                     PUMP. ADDED 16 GAL OF HYDRAULIC FLUID
                                                                     TO REPLENISH THE AMOUNT WHICH HAD
                                                                     LEAKEDFROM THE SYSTEM. EPR
                                                                     FB-704(642-1)

PARTS 58K-219           GP=000012406 NO=01 LIFE=UNK    PACKING PREFORMED

09/02/78 2 903.3 074.0  U C C A M Y N 0000  00.0  00.1  00.1 1  00.0 ADDED 2 GALLONS TRANSMISSION OIL

09/02/78 2 908.6 074.1  S C C A M Y N 0000  00.0  00.5  01.0 2  00.0 50 HOUR MAINTENANCE. EPR FB-1083            1083

14/02/78 2 916.0 075.0  U O O A M N N 0000  00.0  00.9  02.5 3  00.0 PREPARE VEHICLE FOR RAIL IMPACT              737
                                                                     TESTING. THE FOLLOWING ITEMS HAD TO BE
                                                                     REMOVED: WINDSHIELD ASSEMBLY, CAB FRAME
                                                                     AND CANVAS ROPS. EPR FB-737

17/02/78 2 916.0 076.0  U C C A M N N 0000  00.0  00.7  02.1 3  00.0 REPLACE WINDSHIELD ASSEMBLY, CAB FRAME,      741
                                                                     CANVAS AND ROPS EPR FB-741

27/02/78 1 917.1 077.0  U C C A M Y N 2402  00.0  00.1  00.1 1  00.0 REPLACED SHIFT LEVER BALL AND ADAPTER        808
                                                                     EPR FB-808

PARTS 274               GF=000012402 NO=01 LIFE=UNK    BALL, SHIFT LEVER
      2546808              000012402    01      UNK    ADAPTER

03/03/78 1 919.6 078.0  S O O A C N N 1501  00.C  01.7  01.7 1  00.0 INSTALLED LOWER HINGE PIN LOCK PLATE         832
                                                                     RETROFIT KIT EPR FB-832

PARTS 2543057           GF=     11501 NO=01 LIFF=UNK   LOWER HINGE PIN LOCK PLATE RETROFIT KIT, MAIN FRAME
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,941
 D          S OHR    A       T S E E T Q A C    G   CD      CH      MH      M OT                                          E
 A          H DON    C       A / C C M A M S    R   OL      LO      AO      E IT                                          P
 T          F OUD    T       S U H H '   T F    P   NY      OU      NU      N AM                                          R
 E          T MRS    N       K     R S              T       CR      R        GE                                           S
                                                            KS                      DESCRIPTION

08/03/78 2 919.6 079.0  U O O A M N N 2407  00.0  01.0  02.0 1  00.0 REDUCE PRESSURE TO DOLLY WHEEL CYLINDER  850
                                                                     AT RELIEF VALVE. FROM 2700 PS1 TO 2100
                                                                     PS1 EPR FB-850

08/03/78 2 919.6 079.0A U C C A M N N 0000  00.0  00.4  01.2 3  00.0 REMOVE ROPS SO VEHICLE COULD BE SHIPPED  851
                                                                     TO FORT BRAGG EPR FB-851

09/03/78 1 921.8 080.0  U O O A M Y Y 1507  00.0  01.0  02.0 2  00.2 TIGHTENED DOLLY SHEEL RETAINING NUT AND  862
                                                                     REPLACED COTTER PIN EPR FB-862

PARTS 1F-508           GP=000011507 NO=01 LIFE=UNK   PIN, COTTER

09/03/78 2 921.9 081.0  U C C A M N N 0000  00.0               1  00.0 ADDED 20 QUARTS OF HYDRAULIC OIL

14/03/78 2 922.0 082.0  U O O A M Y Y 1201  00.0  00.1  00.2 2  00.0 ADJUST PARKING BRAKE CABLE EPR FB-878   878

24/03/76   929.2 083.0  U O O A   Y N 0607         0.1   0.1 1       REPLACED HORN PUSH SWITCH. EPR FB-1009   1009

PARTS 9183             GP=000010607 NO=01 LIFE=      PUSH, SWITCH

24/03/78   929.2 083.0A U F O A   Y Y 1201         0.8   0.8 1       REPLACED PARKING BRAKE PADS. EPR         1010
                                                                     FB-1010

PARTS 1990761          GP=000011201 NO=02 LIFE=      HOLDER ASSY., PAD.

24/03/78   929.2 083.0B U F F A   Y Y 0708        14.5  38.5 3       REPLACED IMPELLER COVER ON TORQUE        1011
                                                                     CONVERTER. EPR FB-1011
CRITICALITY FACTOR= 1.00

PARTS 235660           GP=000010708 NO=01 LIFE=      COVER, IMPELLER

24/03/78   929.2  83.0C U C C A   N N 0612         0.1   0.1 1       BATTERY CABLES REMOUNTED AND TIGHTENED.  1012
                                                                     EPR FB-1012

24/03/78   929.2 083.0D U C C A   N N 0108          .1    .1 1       TIGHTENED MUFFLER TO EXHAUST PIPE        1012
                                                                     CLAMPS EPR FB-1012

24/03/78   929.2 083.0E U C C A   Y N 0607          .2    .2 1       REPLACE INSTRUMENT PANEL LAMP EPR        1012
                                                                     FB-1012

PARTS M-4489           GP=000010607 NO=01 LIFE=      PANEL LAMP
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03/05/79

MAINTENANCE TASK LOG TEST ,FAMECE1 TEST ITEM ,941

D A T E	S H F T	OHR DOUN OUD HRS	A C T N	T A S K	S / U	E C H R	F C H * S	T Q A C M A M S T F	G R P	CD OL NY T	CH LO OU CR KS	MH AO NU R	M E N	OT IT AM GE	DESCRIPTION	E P R S
24/03/78	929.2	83.0F	U	C	C	A		Y N		0607	.3	.3	1	REPLACED WATER TEMPERATURE WARNING LAMP EPR FB-1012	1012
PARTS 2547368		GP=000010607 NO=01 LIFE=												WARNING LAMP	
24/03/78	929.2	083.0G	U	C	C	A		Y N		0612	.2	.2	1	INSTALLED DRAIN PLUG IN BATTERY BOX EPR FB-1012	1012
24/03/78	929.2	083.0H	U	O	O	A		N N		0304	.2	.2	1	CLEANED PAINT OFF AIR RESTRICTION INDICATOR EPR FB-1012	1012
24/03/78	929.2	083.0I	U	C	C	A		Y N		2406	.2	.2	1	TIGHTEN PACKING RETAINING NUT DOLLY WHEEL GLOBE VALVE EPR FB-1012	1012
24/03/78	929.2	083.0J	U	O	O	A		Y Y		0613	.2	.2	1	TIGHTEN SENDING UNIT EPR FB-1012	1012
24/03/78	929.2	083.0K	U	C	C	A		Y N		0721	.2	.2	1	TIGHTEN FILLER TUBE FITTING EPR FB-1012	1012
24/03/78	929.2	083.0L	U	C	C	A		N N		2406	.1	.1	1	TIGHTEN HYDRAULIC HOSE CLAMP UNDER FENDER AIR CLEANER SIDE EPR FB-1012	1012
24/03/78	929.2	083.0M	U	O	O	A		Y N		0607	.1	.1	1	REPLACED INTER VEHICULAR CONNECTION COVER EPR FB-1012	1012
PARTS MS3105-22		GP=000010607 NO= LIFE=												DUMMY RECEPTACLE	
24/03/78	929.2	083.0N	U	O	O	A		Y Y		1411	.3	.3	1	TIGHTEN HYDRAULIC LINE FITTING AT ACCUMULATOR EPR FB-1012	1012
24/03/78	929.2	083.0O	U	O	O	A		N N			.1	.1	1	STENCIL "NO STEP" DOLLY WHEEL EPR FB-1012	1012
24/03/78	929.2	083.0P	U	O	O	A		Y N		1801	.1	.1	1	STRAIGHTENED HOOD EPR FB-1012	1012
24/03/78	929.2	083.0Q	U	O	O	A		Y Y		0612	0.1	0.1	1	TAPED AND REPOSITIONED BATTERY CABLE. EPR FB-1012	1012
24/03/78	929.2	083.0R	U	O	O	A		Y N		2406	1	1	1	REPLACE PILOT LINE QUICK DISCONNECT PLUG EPR FB-1012	1012
PARTS P-25		GP=000012406 NO= LIFE=												QUICK DISCONNECT PLUG	

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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,941
 D          S OHR   A     T S E E T Q A C   G  CD    CH    MH    M DT                                      E
 A          H DON   C     A / C C M A M S   R  OL    LO    AO    E IT                                      P
 T          F OUD   T     S U H H *   T F   P  NY    OU    NU    N AM                                      R
 E          T MRS   N     K     R S            T     CR    R       GE                                      S
                                                     KS                    DESCRIPTION
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24/03/78    929.2 083.0S U O O A    Y N 1211         0.8   0.8 1      INSTALLED NEW TUBE ASSEMBLY TO THE    409(S-1)
                                                                     SERVICE GLAD HAND. EPR FB-409(S-1)
PARTS 2547946                GP=000011211 NO=01 LIFE=  351 TUBE ASSY, METAL
24/03/78 0 929.2 083.0T U O O A M Y N 0505           1.0   1.0 1      REPLACED ENGINE COOLING FAN. EPR      434(S-1).
                                                                     FB-434(S-1).
PARTS 212672                 GP=000010505 NO=01 LIFE=        FAN
24/03/78    929.2  83.0U U C C A    N N 0612         0.2   0.2 1      CLEANED AND SERVICED BATTERIES. EPR   1012
                                                                     FB-1012
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,942
 D         S OHR   A    T S E E T Q A C   G  CD    CH    MH    M OT                                          E
 A         H DON   C    A / C C M A M S   R  OL    LO    AO    E IT                                          P
 T         F OUC   T    S U H H '   T F   P  NY    OU    NU    N AM                                          R
 E         T MPS   N    K     R S            T     CR    R       GE                                          S
                                                   KS                 DESCRIPTION

18/01/78 1 000.0 001.0  U C C A C N N 0000  00.0  00.0  00.0 0  00.0 COUPLED DUMPER TO POWER SECTION T-935.   559
                                                                     EPR FB-559 (TIME CHARGED TO P.S.)

19/01/78 1 007.0 002.0  U O O A C N N 1311  00.0  00.6  00.6 1  00.0 REMOVED ROCK GUARDS ON BOTH WHEELS EPR    564
                                                                     FB-564

23/01/78 1 038.6 003.0  U O O A M Y Y 1801  00.0  01.8  02.1 2  00.0 REPAIRED TAILGATE REPLACED QUICK         592
                                                                     RELEASE PINS WITH 1 INCH BOLTS AND NUTS
                                                                     EPR FB-592
CRITICALITY FACTOR= 0.50

PARTS UNKNOWN             GP=000081801 NO=02 LIFE=      BOLT, 1 INCH X 6 INCH
      UNKNOWN                000081801    02            NUT, PLAIN 1 INCH

25/01/78 1 052.2 004.0  U C C A M Y N 0609  00.0  00.1  00.1 1  00.0 REPLACED DOOR ASSEMBLY ON REAR CURBSIDE  613
                                                                     COMPOSITE LIGHT (TAILLIGHT LENS) EPR
                                                                     FB-613

PARTS 11639535            GP=000080609 NO=01 LIFE=UNK   DOOR ASSEMBLY

01/02/78 1 133.2 005.0  S C C A M Y N 0000  00.0  00.2  00.2 1  00.0 ADDED 1/2 PINT BRAKE FLUID TO MASTER     637
                                                                     CYLINDER PERFORMED 50 HOUR SERVICE EPR
                                                                     FB-637

01/02/78 1 137.2 006.0  U O O A M N N 1801  00.0  00.2  00.2 1  00.0 REPLACED CAPSCREWS IN THE LH BODY STAND  638
                                                                     SUPPORT EPR FB-638

PARTS 17C-828H            GP=000081801 NO=04 LIFE= UNK  SCREW, CAP, HEX HEAD 1/2-13 UNC 1 3/4 IN LG LH BODY STAND
                                                               SUPPORT

24/02/78 1 193.0   7.0  U O O A M Y N 1801  00.0  00.5  00.5 1  00.1 STRAIGHTENED CURBSIDE OF ROCK GUARD EPR   800
                                                                     FB-800

24/02/78 2 193.0   7.0A U C C A M Y N 0609  00.0  00.5  00.5 1  00.0 REPLACE TAIL LIGHT AND DIRECTIONAL       797
                                                                     SIGNAL LAMPS EPR FB-797

PARTS MS-15570-623        GP=000080609 NO=01 LIFE=UNK   LAMP, INCANDESCENT
      MS-35478-1683          000080609    01      UNK   LAMP, INCANDESCENT

31/03/78   219.0   8.0  U O O A   N N 1801         0.3   0.3 1       REPLACED QUICK RELEASE PINS TAIL GATE    982
                                                                     WITH BOLTS. DRILLED HOLES IN END OF
                                                                     BOLT AND INSTALLED COTTER PINS. REFER
                                                                     EPR FB-982 ITEM 1

PARTS UNK                 GP=          NO=01 LIFE=      BOLT 1"X6" USS NC
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,942
 D        S OHR   A    T S E E F T Q A C  G  CD     CH    MH    M OT                                    E
 A        H DON   C    A / C C H A M S    R  OL     LO    AO    E IT                                    P
 T        F OUC   T    S U H H '   T F    P  NY     OU    NU    N AM                                    R
 E        T MRS   N    K     R S             T      CR    R       GE                                    S
                                                    KS                  DESCRIPTION
------------------------------------------------------------------------------------------------------------
        UNK                                  01            WASHER LOCK
        UNK                                  01            NUT
        770                      000081501   01            PIN COTTER

 31/03/78   219.0   8.0A U O O A   Y Y 0609       0.3    0.3 1   0.2 RECONNECTED LIGHT WIRING TO STOP LIGHT   982
                                                                   REF EPR F3-982 ITEM 2

 31/03/78   219.0   8.0B U C C A   Y N 1501       0.1    0.1 1       REPLACED SAFETY PIN ON RIGHT SHACKLE.    982
                                                                   REF EPR F3-982 ITEM 3

 PARTS 770                  GP=000081501 NO=01 LIFF=       PIN COTTER
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,943
 D          S OHR   A     T S E E T Q A C   G  CD    CH    MH    M DT                                  E
 A          H DON   C     A / C C M A M S   R  OL    LO    AO    E IT                                  P
 T          F OUD   T     S U H H '   T F   P  NY    OU    NU    N AM                                  R
 E          T MRS   N     K     R S            T     CR     R      GE                                  S
                                                     KS                 DESCRIPTION

14/09/77 2 078.2 001.0  S O O A C N N 1801  00.0  00.5  01.0 2  00.0 INSTALL ROPS ON POWER SECTION

14/09/77 2 078.2 001.0A S O O A C N N 2202  00.0  00.5  01.0 2  00.0 INSTALL 2 REAR VIEW SIDE MIRRORS ON
                                                                    POWER SECTION

14/09/77 2 078.2 001.0B S O O A C N N 1802  00.0  00.2  00.4 2  00.0 INSTALL WINDSHELD + WIPER ASSEMBLY ON
                                                                    POWER SECTION

14/09/77 2 078.2 001.0C S O O A C N N 1801  00.0  01.0  02.0 2  00.0 ASSEMBLE + INSTALL CAB RACK FRAME ON
                                                                    POWER SECTION

15/09/77 2 078.2 001.0D S C C A M N N 1313  00.0  00.2  00.2 1  00.0 ADJUSTED TIRE PRESSURE TO 45 PS1 THE
                                                                    TIRE PRESSURE WAS TOO HIGH, 55 PS1

22/09/77 2 099.2 001.1  U O O A M Y Y 2407  00.0  00.8  00.8 1  00.0 REPLACE BROKEN DOLLY WHEEL CYLINDER EPR  184
                                                                    FB-184

PARTS 2508337            GP=000012407 NO=01 LIFE=       DOLLY WHEEL CYLINDER ASSY

22/09/77 2 103.8 001.2  S C C A M Y N 0000          0.4   0.8 2       PERFORMED 50 HR MAINTENANCE PER LUBE      1049
                                                                    ORDER L05-3840-201-12. EPR FB-1049

24/09/77 1 103.8 001.3  U O O I C N N 2407  00.0  00.5  00.5 1  00.0 INSTALL DOLLY WHEEL SHUT OFF VALVE. EPR  199
                                                                    FB-199

PARTS 1900FFG            GP=000012407 NO=02 LIFE=00000 VALVE
      6505-4-8              000012407    02      00000 CONNECTORS
      79939D                000012407    02      00000 CONNECTORS

28/09/77 2 147.2 002.0  U O O A M N N 1208  00.0  00.2  00.2 1  00.0 INSTALL NEW HOSE SERVICE COUPLING TO     219
                                                                    REPLACE BROKEN COUPLING EPR FB-219

PARTS 7007-67            GP=000011208 NO=01 LIFE=       COUPLING, HOSE SERVICE

28/09/77 2 148.1   3.0  U O O A M Y Y 1208  00.0  01.3  02.6 2  00.6 REMOVE KINK IN AIR HOSE ASSY TO          218
                                                                    THROTTLE AIR VALVE, RESTRICTING
                                                                    OPERATION OF SERVICE BRAKES EPR FB-218
CRITICALITY FACTOR= 1.00

29/09/77 1 155.0   3.1  S C C A M Y N 0000          0.4   0.8 2       PERFORMED 50 HR MAINTENANCE PER LUBE      1061
                                                                    ORDER L05-3840-201-12. EPR FB-1061
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,943
 D          S OHR   A    T S E E T Q A C   G   CO     CH     MH     M OT                                     E
 A          H DON   C    A / C C M A M S   R   OL     LO     AO     E IT                                     P
 T          F OUD   T    S U H H '   T F   P   NY     OU     NU     N AM                                     R
 E          T HRS   N    K     R S             T      CR     R        GE                                     S
                                                      KS                DESCRIPTION

 04/10/77 2 200.0 004.0  U O O A M Y Y 0609  00.0  01.6  01.6 1  00.8 REPLACE DEFECTIVE RELAY IN HEADLIGHT      238
                                                                      AND FLOODLIGHT CIRCUIT. EPR FB-238
CRITICALITY FACTOR= 1.00

 04/10/77 1 200.0 004.1  S C C A M Y N 0000  00.0  00.7  01.4 2  00.0 PERFORMED 50 HOUR MAINTENANCE. EPR       1106
                                                                      FB-1106

 13/10/77 1 248.9 005.0  S O O A M Y N 000.  00.0  00.7  01.4 2  00.0 PERFORMED 250 HR MAINTENANCE PER TUBE    1081
                                                                      ORDER L05-202-12 REPLACED ALL OIL,
                                                                      FUEL, WATER, AND TRANSMISSION FILTERS
                                                                      ADDED 5 SQUIRTS FO OIL TO MIDMOUNT.
                                                                      CHECKED FLUID LEVELS IN PLANETARIES,
                                                                      TRANSMISSION HYDRAULIC TANK AND MASTER
                                                                      CYLINDER WHICH ALL CHECKED OK. EPR
                                                                      FB-1081

 PARTS MS-35802-3          GP=000010106 NO=02 LIFE=        FILTER ELEMENT, OIL, FULL FLOW
       9311                   000010106    02              FILTER ELEMENT, OIL, BYPASS
       5678                   000010309    02              CARTRIDGE, FUEL FILTER
       LF-511                 000010721    01              FILTER ELEMENT, OIL, TRANSMISSION
       299080                 000010508    01              FILTER ELEMENT, WATER, CORROSION RESIST
       AC43887                000011202    01              FILTER ELEMENT, FL, POWER CLUSTER
       569022-03              000010900    01              VENT ASSY, BREATHER, MDMT
       569022-03              000011100    01              VENT ASSY, BREATHER, AXLE
       569020-03              000010700    01              VENT ASSY, BREATHER, TRANSMISSION

 13/10/77 2 249.6 006.0A U O O A M Y Y 2406         0.7    0.7 1   0.4 TIGHTEN ACCUMULATOR LINE, BECAUSE THERE  1100
                                                                      WAS A SMALL HYDRAULIC OIL LEAK. EPR
                                                                      FB-1100

 13/10/77 1 254.5 007.0  U O C I M N N 2201  00.0  00.2  00.4 2  00.0 INSTALLED CANVAS CAB ASSEMBLY. (TMDEP
                                                                      5- -201-208P INADEQUATE- TM STATES THE
                                                                      PERTINENT CANVAS CAB ILLUSTRATIONS FIG
                                                                      2-17C, PAGE 2-80C + FIGURE 132, PAGE
                                                                      C-172 SHALL BE SUPPLIED LATER.)

 13/10/77 2 254.5 007.1A U C C A M N N 0000  00.0  00.3  00.3 1  00.0 ADDED 4 QUARTS OF TRANSMISSION OIL

 14/10/77 2 268.3 008.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADD 2 QJARTS OF ENGINE OIL
```

03/05/79

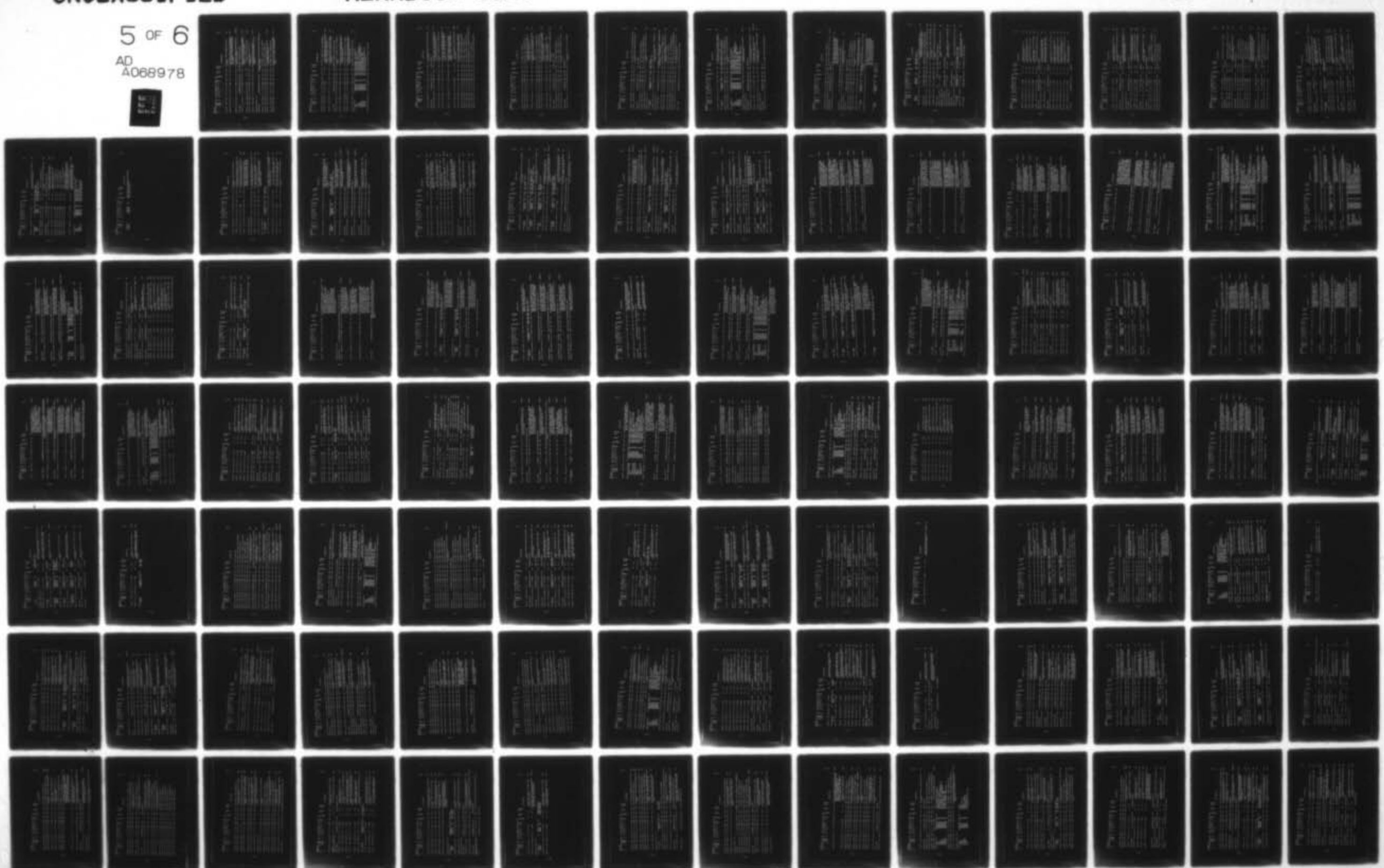
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,943

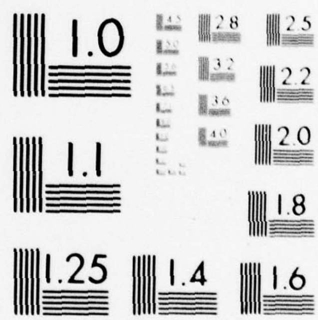
D A T E	S H F T	OHR DON OUD MKS	A C T N	T A S K	S / U	E C H R	E C H '	T M ' S	Q A	A M T	C S F	G R P	CD OL NY T	CH LO OU CR KS	MH AO NU R	M E N	OT IT AM GE	DESCRIPTION	E P R S
14/10/77	2	268.3	008.0A	U	C	C	A	M	N	N	0000		00.0	00.2	00.2	1	00.0	ADD 2 QUARTS OF OIL TO TRANSMISSION	
18/10/77	1	290.8	009.0	U	C	C	A	M	Y	N	1313		00.0	00.6	01.2	2	00.0	INFLATED TWO TIRES TO 55 PSI. TIRE PRESSURE ON BOTH TIRES WERE LOW AT 40PSI.	
19/10/77	1	304.5	010.0	S	C	C	A	M	Y	N	0000			0.8	1.6	2		PERFORMED 50 HR. MAINTENANCE PER LUBE ORDER L05-3840-201-12. EPR FB-1084	1084
19/10/77	1	304.5	010.0A	U	C	C	A	M	Y	N	0609		00.0	00.2	00.2	1	00.0	DURING 50 HR MAINTENANCE, REPLACED BULB IN AMBER MARKER LIGHT. BULB HAD BURNED OUT. REPLACEMENT BULB FUNCTIONED OK. EPR FB-300	300
21/10/77	1	322.7	011.0	U	C	C	A	M	N	N	1802		00.0	00.2	00.2	1	00.0	REPLACED BOLT ON THE ENGINE ACCESS PANEL, LOCATED IN THE RIGHT REAR WHEEL WELL. THE BOLT WAS DISCOVERED MISSING DURING THE PRE-OPERATIONAL CHECK. EPR FB-301	301
25/10/77	1	347.7	012.0	U	O	O	A	M	N	N	1501		00.0	00.3	00.6	2	00.0	REMOVED LADDER ON AIR INTAKE CLEANER SIDE OF UNIT. WELD HAD BROKEN DURING BACK-FILLING OPERATIONS. INSPECTION SHOWED NO WELD PENETRETION. EPR FB-304	304
25/10/77	2	351.7	013.0	S	C	C	A	M	Y	N	0000			00.6	1.0	2		PERFORMED 50 HR. MAINTENANCE PER LUBE ORDER 605-3840-201-12. EPR FB-1085	1085
25/10/77	2	351.7	013.0A	U	O	O	A	M	Y	Y	0505			0.1	0.2	2		TIGHTENED FAN BELTS TO THE PROPER TENSION. EPR FB-1101	1101
28/10/77	2	376.1	014.0A	U	O	O	A	M	N	N	1501		00.0	02.0	04.0	2	00.0	STRAIGHTENED LADDER ASSY -WELDED TAB ON LADDER MOUNT LADDER ASSY EPR FB-304(S-1)	304(S-1)
28/10/77	1	376.1	014.0B	U	O	O	I	M	Y	Y	2202		00.0	01.0	01.0	1	00.0	INTERCHANGED WINDSHIELD WIPER CONTROL SWITCH, ON THE PASSENGER SIDE, WITHE THE WIPER CONTROL ON THE OPERATORS SIDE OF THE WINDSHIELD. EPR FB-306	306

AD-A068 978 ARMY MOBILITY EQUIPMENT RESEARCH AND DEVELOPMENT COMM--ETC F/G 13/3
FAMILY OF MILITARY ENGINEER CONSTRUCTION EQUIPMENT (FAMECE) PRO--ETC(U)
MAR 79 A B FOLLANSBEE, R T EILER, C W HASLE

UNCLASSIFIED MERADCOM-2269 NL

5 OF 6
AD
A068978





MICROCOPY RESOLUTION TEST CHART

NATIONAL BUREAU OF STANDARDS-1963-A

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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,943
 D         S OHR   A    T S F E T Q A C   G  CO    CH    MH    M DT                                                 E
 A         H DON   C    A / C C M A M S   R  OL    LO    AO    E IT                                                 P
 T         F OUD   T    S U H H '   T F   P  NY    OU    NU    N AM                                                 R
 E         T HRS   N    K     R S            T     CR    R       GE                                                 S
                                                   KS                  DESCRIPTION
-------------------------------------------------------------------------------------------------------------------------

28/10/77 2 376.7 015.0  U O O A M Y Y 0601  00.0  00.8  01.6 2  00.0 ADJUST LOOSE ALTERNATOR BELTS EPR           307
                                                                     FB-307

29/10/77 1 384.6 016.0  U O O A M Y Y 1208  00.0  00.3  00.3 1  00.1 LOST DRAIN VALUE OFF AIR RESERVOIR ON      308
                                                                     POWER SECTION, VALVE UNSCREWED DURING
                                                                     PIT EXCAUATION. REINSTALLED SAME VALVE.
                                                                     EPR FB-308

29/10/77 1 387.4 017.0  U O O A M Y Y 0609  00.0  00.2  00.2 1  00.0 REPLACED CURBSIDE SERVICE HEADLIGHT        305(S-1)
                                                                     LAMP EPR FB-305(S-1)
-------------------------------------------------------------------------------------------------------------------------
PARTS 4880             GP=000010609 NO=01 LIFE=UNK   LAMP, SEAL BEAM, CURBSIDE HEAD LIGHT

03/11/77 1 401.1 018.0  S C C A M Y N 0000  00.0  01.3  02.6 2  00.0 50 HR MAINTENANCE MID MOUNT BEARING OK     1086
                                                                     UNCOUPLING .4 HR. BRAKE RESERVOIR OK
                                                                     COUPLING .3 HR. EPR FB-1086
-------------------------------------------------------------------------------------------------------------------------

03/11/77 1 401.1 018.0A U O O A M Y Y 0505         0.2   0.4 2        TIGHTENED FAN BELTS EPR FB-1102           1102

02/11/77 2 401.1 018.0B U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 1 GALLON OF OIL TO THE
                                                                     TRANSMISSION
-------------------------------------------------------------------------------------------------------------------------
04/11/77 1 407.8 019.0  U F F A M Y Y 0710  00.0  02.5  05.0 2  01.0 REPLACED NEUTRAL SOLENOID ON               310
                                                                     TRANSMISSION ELECTRIC CONTROL VALVE EPR
                                                                     FB-310
CRITICALITY FACTOR= 1.00

PARTS 236402           GP=000010710 NO=01 LIFE=UNK   SOLENOID LOCATED ON ELECTRIC CONTROL VALVE ROADSIDE OF
                                                            TRANS- MISSION.

04/11/77 1 408.1 019.0A S C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GALLON OE 30 TO ENGINE.

04/11/77 2 412.3 020.0  U C C A M N N 0000  00.0  00.3  00.3 1  00.0 ADD 1 GALLON OF ENGINE OIL
-------------------------------------------------------------------------------------------------------------------------
04/11/77 2 419.1 021.0  U O O A M Y N 0613  00.0  00.2  00.2 1  00.0 RE-CONNECT BROKEN WIRE BACK TO             311
                                                                     THERMOSENDER EPR FB-311

05/11/77 1 424.9 022.0  U C C A M Y N 0000  00.0  00.1  00.1 1  00.0 ADDED 2 QTS OF TRANSMISSICN OIL.

05/11/77 2 427.0 022.1  U C C A M Y N 1414  00.0  00.2  00.2 1  00.0 CLEAN MUD FROM THE TOWING ADJUSTMENT       312
                                                                     SCREW IN THE HYDRAULIC MANIFOLD EPR
                                                                     FB-312
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03/05/79
MAINTENANCE TASK LOG     TEST ,FAMECE1 TEST ITEM ,943
 D        S OHR   A     T S E E T Q A C   G  CD     CH     MH     M OT                                                E
 A        H DON   C     A / C C M A M S   R  OL     LO     AO     E IT                                                P
 T        F OUD   T     S U H H '   T F   P  NY     OU     NU     N AM                                                R
 E        T MRS   N     K     R S            T      CR     R       GE                                                 S
                                                    KS                     DESCRIPTION

08/11/77 2 450.8 023.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADD 2 QUARTS OF OIL TO TRANSMISSION

09/11/77 1 451.0 024.0  S C C A M Y N 0000         0.5   1.0 2       50 HR MAINTENANCE ADDED OIL TO MIDMOUNT  1087
                                                                     BERAING ADDED BRAKE FLUID TO MASTER
                                                                     CYLINDER RESERVOIR EPR FB-1087

09/11/77 1 452.3 025.0  U O O A M Y N 0312  00.0  00.3  00.3 1  00.1 REMOVED TREADLE PIN REMOVED TREADLE,     314
                                                                     CLEANED ROCKS FROM UNDER FOCT TREADLE.
                                                                     EPR FB-314

PARTS 3111             GF=000010312 NO=01 LIFE=UNK    FOOT TREADLE, THROTTLE VALVE COCKPIT FLOOR

09/11/77 2 463.5 026.0  S C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 2 GALLONS OF OIL TO HYDRAULIC
                                                                     TANK

10/11/77 2 477.5 027.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GAL. OF TRANSMISSION FLUID TO
                                                                     THE DOZER POWER SECTION DURING POST
                                                                     OPERATION INSPECTION.

11/11/77 1 477.6 028.0M U C C A M N N 0000  00.0  00.2  00.2 1  00.1 ADDED 3 QUARTS OE-30 OIL TO ENGINE

11/11/77 2 491.1 029.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 2 QTS OF TRANSMISSION FLUID TO
                                                                     THE DOZER POWER SECTION DURING POST
                                                                     OPERATION INSPECTION.

14/11/77 2 506.3 030.0  S O O A M Y N 0000  00.0  04.9  05.3 2  00.0 500 HR. MAINTENANCE EPR FB-316           316

PARTS MS-35802-3       GP=000010106 NO=02 LIFE=257.4 FILTER ELEMENT, OIL, FULL FLOW
      9311                000010106    02       257.4 FILTER ELEMENT, OIL, BYPASS
      5678                000010309    02       257.4 CARTRIDGE, FUEL FILTER
      LF-511              000010721    01       257.4 FILTER ELEMENT, OIL, TRANSMISSION
      299080              000010508    01       257.4 FILTER ELEMENT, WATER, CORROSION RESIST
      AC43887             000011202    01       257.4 FILTER ELEMENT, FL, POWER CLUSTER
      569022-03           000010900    01       257.4 VENT ASSY, BREATHER, MDMT
      569022-03           000011100    01       257.4 VENT ASSY, BREATHER, AXLE
      569020-03           000010700    01       257.4 VENT ASSY, BREATHER, TRANSMISSION
      P11-9373            000010304    01       257.4 FILTER, SAFETY ELEMENT

15/11/77 2 508.5 031.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 1 GALLON OF ENGINE CIL
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,5/79
INTENANCE TASK LOG TEST ,FAMECE1 TEST ITEM ,943

/ A T E	S H F T	OHR DON OUD MRS	A C T N	T S E E T Q A C A / C C M A M S S U H H ' T F K R S	G R P	CD OL NY T	CH LO OU CR KS	MH AO NU R	M E N	DT IT AM GE	DESCRIPTION		E P R S
16/11/77	2	520.0	032.0	U O D A M Y Y	0613	00.0	00.2	00.2	1	00.0	REPLACED TRANSMISSION PRESSURE SWITCH EPR FB-320		320
PARTS M1-1421				GP=000010613 NO=01 LIFE=				SWITCH, PRESSURE					
16/11/77	2	520.0	032.0A	U O D A M Y N	0000	00.0	00.2	00.2	1	00.0	ADDED 3 GAL. OIL TO TRANSMISSION. LOSS OF OIL WAS DUE TO BROKEN TRANSMISSION OIL PRESSURE SWITCH EPR FB-319		319
18/11/77	1	539.7	033.0	U C C A M N N	0000	00.0	00.2	00.2	1	00.1	ADDED 1 GALLON OE-10 TO TRANSMISSION SUMP		
18/11/77	1	541.9	034.0	U O O A C Y Y	1501	00.0	00.5	01.0	2	00.0	UPPER FUEL TANK MOUNTING BRACKET FAILED AT THE WELD. REWELDED MOUNTING BRACKET TO THE POWER UNIT FRAME ASSY. EPR FB-323		323
18/11/77	1	541.9	034.0A	U O O A C Y Y	1501	00.0	00.5	01.0	2	00.0	UPPER HYDRAULIC FLUID RESERVOIR MOUNTING BRACKET CRACKED PARTIALLY THROUGH THE WELD. REWELDED BRACKET. EPR FB-324		324
21/11/77	1	563.3	035.0	S C C A M Y N	0000		0.5	1.0	2		50 HR LUBRICATION PER LO5-3840-201-12 EPR FB-1088		1088
21/11/77	1	563.3	035.0A	U O O A M Y Y	1208	00.0	00.2	00.4	2	00.3	ADJUSTED LINKAGE BETWEEN THROTTLE DETENT AND AIR CYLINDER. EPR FB-681		681
29/11/77	2	572.8	036.0	U C C A M N N	0000	00.0	00.2	00.2	1	00.0	ADDED 2 QUARTS OF TRANSMISSION OIL		
29/11/77	2	572.8	036.0A	U C C A M N N	0000	00.0	00.2	00.2	1	00.0	ADDED 1 QUART OF ENGINE OIL		
30/11/77	2	578.5	037.0	U C C A M N N	0000	00.0	00.2	00.2	1	00.0	ADDED 4 QUARTS OF TRANSMISSION OIL		
03/12/77	1	605.7	038.0	S C C A M Y N	0000	00.0	00.5	00.5	1	00.0	PERFORMED 50 HR. MAINTENANCE EPR FB-682		682
03/12/77	1	606.7	039.0	U C C A M N N	0000	00.0	00.1	00.1	1	00.0	ADDED 1 QT. ENGINE OIL		
03/12/77	2	615.3	040.0	U C C A C N N	0000	00.0	00.2	00.2	1	00.0	ADDED 2 QUARTS OF TRANSMISSION OIL		

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03/05/79
MAINTENANCE TASK LOG     TEST ,FAMECE1 TEST ITEM ,943
 D        S OHR    A      T S F E T Q A C    G   CD      CH      MH      M DT                                                   E
 A        H DUN    C      A / C C M A M S    R   OL      LO      AO      E IT                                                   P
 T        F OUD    T      S U H H '   T F    P   NY      OU      NU      N AM                                                   R
 E        T MRS    N      K     R S              T       CR      R         GE                                                   S
                                                         KS                        DESCRIPTION

06/12/77 1 625.4 041.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 QT. ENGINE OIL

06/12/77 1 625.4 041.0A U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GAL. TRANSMISSION OIL

08/12/77 1 642.4 041.1  U O O A M Y Y 1208  00.0  01.0  01.0 1  00.3 REMOVED PULL TYPE AIR CYLINDER AND          532
                                                                     CLEANED, REINSTALLED WITH DRAIN
                                                                     POINTING DOWN. EPR FB-532

08/12/77 1 642.4 041.1A U O O A M N N 0309  00.0  00.8  00.8 1  00.2 REMOVED FUEL FILTER, REMOVED ICE AND        533
                                                                     FROZEN SEDIMENT, REINSTALLED. EPR
                                                                     FB-533

08/12/77 2 647.9 042.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 1 GALLON OF TRANSMISSION OIL

09/12/77 2 659.9 043.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 3 QUARTS OF TRANSMISSION OIL

10/12/77 1 650.3 044.0  U O O A M Y Y 1208  00.0  00.6  00.6 1  00.2 APPLIED HEAT TO FROZEN AIR CYLINDER         568
                                                                     USED IN THROTTLE LOCK-OUT. TREADLE STUD
                                                                     WAS STUCK. EPR FB-568

10/12/77 1 661.4 045.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 QT OF ENGINE OIL DURING
                                                                     PREOPERATION INSPECTION

12/12/77 2 664.0 046.0  U O O A M Y Y 0608  00.0  00.9  00.9 1  00.0 REPLACE DEFECTIVE ELECT. CONTROL SWITCH     684
                                                                     EPR FB-684

PARTS 2546584           GP=000010608 NO=01 LIFE=        SWITCH, ELECT. CONTROL

14/12/77 1 683.8 047.0  S C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 2 QUARTS ENGINE OIL

14/12/77 1 683.8 047.0A S C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 2 QUARTS HYDRAULIC FLUID

15/12/77 2 686.7 048.0  U C C A M Y N 0501  00.0  00.1  00.1 1  00.0 REPLACE DEFECTIVE RADIATOR CAP. EPR         469
                                                                     FB-469

PARTS 2549314           GP=000010501 NO=01 LIFE=UNK     RADIATOR CAP

16/12/77 1 688.5 049.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.1 ADDED 3 GALLONS OE-10 TO HYDRAULIC
                                                                     RESERVOIR
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,943
 O          S OHR   A     T S E E T Q A C   G  CD    CH     MH    M OT                                    E
 A          H DON   C     A / C C M A M S   R  OL    LO     AO    E IT                                    P
 T          F OUD   T     S U H H .   T F   P  NY    OU     NU    N AM                                    R
 E          T MRS   N     K     R S            T     CR      R     GE                                     S
                                                     KS                   DESCRIPTION

16/12/77 1 688.5 049.0A U C C A M N N 0000  00.0  00.2  00.2 1  00.1 ADDED 1 QT OE-10 TO TRANSMISSION SUMP

16/12/77 1 689.0 050.0  U C C A M Y N 0609  00.0  00.3  00.3 1  00.0 REAR CURBSIDE HEADLAMP REPLACED EPR      453
                                                                      FB-453

PARTS 4880               GP=000010609 NO=01 LIFE=       LAMP, SEAL BEAM

16/12/77 2 694.5 051.0  S C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 2 QUARTS ENGINE OIL

16/12/77 2 694.5 051.0A S C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 3 GALLONS TRANSMISSION OIL

05/01/78 2 694.5 051.0B U F O A C Y Y 2401  00.0  09.1  26.8 3  07.4 REPLACED TANDEM PUMP AND GASKET EPR      495
                                                                      FB-495
CRITICALITY FACTOR= 1.00

PARTS 5230-19            GP=000012401 NO=01 LIFE=UNK    PUMP, TANDEM
      552161                000012401    01      UNK    GASKET, TANDEM PUMP

04/01/78 1 698.7 052.0  U F O A C Y Y 0721  00.0  01.4  01.4 1  00.2 REPLACED HOSE ASSEMBLY, TRANSMISSION     536
                                                                      LOCKUP EPR FB-536
CRITICALITY FACTOR= 1.00

PARTS 322506-JS6-15      GP=000010721 NO=01 LIFE= UNK   GOSE ASSEMBLY NM TRANSMISSION LOCKUP O MODULATOR VALVE,
                                                              REAR ROADSIDE OF TRANSMISSION

04/01/78 2 698.7 053.0  U O C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 3.5 GALS OF TRANSMISSION OIL.

06/01/78 1 706.9 054.0  U O O A M N N 0609  00.0  01.5  01.5 1  00.5 REPAIRED IMPROPERLY INSTALLED ROPS       506
                                                                      RECEPTACLE EPR FB-506

06/01/78 1 710.2 055.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GAL ENGINE OIL.

06/01/78 1 710.2 055.0A U O C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GAL. OF TRANSMISSION OIL.

07/01/78 1 716.9 056.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.1 ADDED 3 QTS OE-10 TO TRANSMISSION SUMP

07/01/78 1 719.2 057.0  U O O A M Y N 2202  00.0  00.1  00.1 1  00.0 REPLACED LOWER MIRROR MTG ARM ASSY,      515
                                                                      CURBSIDE EPR FB-515

PARTS 67-480             GP=000012202 NO=01 LIFE= UNK   MIRROR MTG ARM ASSY CURBSIDE, COCKPIT.
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,943
U         S OHR   A     T S E E T Q A C   G  CO    CH     MH     M OT                                                    E
A         H DON   C     A / C C M A M S   R  OL    LO     AO     E IT                                                    P
T         F OUD   T     S U H H '  T F    P  NY    OU     NU     N AM                                                    R
E         T HRS   N     K     R S            T     CR     R        GE                                                    S
                                                   KS                        DESCRIPTION

07/01/78 1 719.2 057.0A U O O A M Y Y 0312  00.0  00.1   00.1 1  00.1 REPLACED PINS + COTTER KEY THROTTLE          518
                                                                      LOCK OUT BELL CRANK ASSEMBLY EPR FB-518

PARTS 4F-06106            GP=000010312 NO=02 LIFE= UNK  PIN, STRAIGHT HEAD 3/8 INDIA, 1 1/16 IN LG
      1F-314                 000010312    02       UNK  PIN, COTTER UNDER COCKPIT AT ACCELERATOR

12/01/78 1 750.9 058.0  S C C A M N N 0000  00.0  00.1   00.1 1  00.0 ADDED 3 GALLONS TRANSMISSION OIL

17/01/78 1 755.0 059.0  S O O A M Y N 0000  00.0  04.6   04.8 2  00.0 PERFORMED 250 HOUR MAINTENANCE EPR          558
                                                                      FB-558

PARTS MS-35802-3          GP=000010106 NO=02 LIFE=248.7 FILTER ELEMENT, OIL, FULL FLOW
      9311                   000010106    02      248.7 FILTER ELEMENT, OIL, BYPASS
      5678                   000010309    02      248.7 CARTRIDGE, FUEL FILTER
      LF-511                 000010721    01      248.7 FILTER ELEMENT, OIL, TRANSMISSION
      299050                 000010508    01      248.7 FILTER ELEMENT, WATER, CORROSION RESIST
      AC43887                000011202    01      248.7 FILTER ELEMENT, FL, POWER CLUSTER
      569022-03              000010900    01      248.7 VENT ASSY, BREATHER, MOMT
      569022-03              000011100    01      248.7 VENT ASSY, BREATHER, AXLE
      569020-03              000010700    01      248.7 VENT ASSY, BREATHER, TRANSMISSION

20/01/78 1 762.0 060.0  U F O A C Y Y 0312  00.0  03.9   07.8 2  00.0 REPLACED BALL SOCKET ON THROTTLE             574
                                                                      LINKAGE EPR FB-574
CRITICALITY FACTOR= 1.00

PARTS SP1003CP            GP=000010312 NO=01 LIFE=UNK   BALL SOCKET (RH)

23/01/78 2 768.1 061.0  U O O A M Y Y 0505  00.0  00.2   00.2 1  00.0 RETIGHTENED LOOSE MOUNTING SCREWS ON         593
                                                                      FAN RING EPR FB-593

24/01/78 1 774.3 062.0  U C C A M N N 0613  00.0  00.2   00.2 1  00.1 RECONNECTED WIRE TO COOLANT PROBE            605(311-1)
                                                                      ASSEMBLY EPR FB-605(311-1)

24/01/78 1 774.3 062.0A U H O A M Y Y 1413  00.0  01.0   01.0 1  00.0 REPLACED SEAL KIT IN STEERING CONTROL        604
                                                                      VALVE EPR FB-604
CRITICALITY FACTOR= 1.00

PARTS 996330              GP=000011413 NO=01 LIFE=UNK   SEAL KIT

24/01/78 2 784.3 063.0  U C C A M N N 0000  00.0  00.2   00.2 1  00.0 ADDED 2 QUARTS OF TRANSMISSION OIL
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,943
 D          S OHR    A     T S E E T Q A C   G  CD    CH    MH    M DT                                     E
 A          H DON    C     A / C C M A M S   R  OL    LO    AO    E IT                                     P
 T          F OUD    T     S U H H *   T F   P  NY    OU    NU    N AM                                     R
 L          T MPS    N     K     R S            T     CR     R     GE                                      S
                                                      KS                      DESCRIPTION

24/01/78 2 784.3 063.0A U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 2 QUARTS OF ENGINE CIL

24/01/78 2 784.3 063.0B U O O I M Y N 1208  00.0  00.5  00.5 1  00.0 REPLACED HORN SOLENOID EPR FB-297(S-1)  297(S-1)

PARTS MS17981-1         GP=000011208 NO=01 LIFE=UNK   SOLENOID, HORN

27/01/78 1 792.2 063.1  U O O A M N N 1211  00.0  01.2  01.2 1  00.2 REPLACED SERVICE HOSE COUPLER REMOVED   643.
                                                                    AND STRAIGHTENED AIRLINE, REINSTALLED
                                                                    SAME PART 2547946 REMOVED AND WELDED
                                                                    AIR RES MTC BRACKET AND REINSTALLED
                                                                    PART 205267 EPR FB-643.

PARTS 7007-67           GP=   011211 NO=01 LIFE= UNK  HOSE COUPLER, SERVICE AIR RESERVOIR

28/01/78 1 795.4 064.0  U F O A M Y Y 1208  00.0  00.4  00.4 1  00.1 REPLACED PREFORMED PACKING IN AIR       627
                                                                    CYLINDER EPR FB-627
CRITICALITY FACTOR= 1.00

PARTS 116337            GP=000011208 NO=01 LIFE=UNK   PACKING, PREFORMED

30/01/78 2 804.3 065.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 2 QUARTS TRANSMISSION OIL

31/01/78 2 812.5 066.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GALLON TRANSMISSION OIL

01/02/78 2 815.5 067.0  S C C A M Y N 0000  00.0  00.6  01.2 2  00.0 PERFORMED 50 HOUR MAINTENANCE EPR       619
                                                                    FB-619

01/02/78 1 818.9 068.0  U C C A M Y N 1501  00.0  00.1  00.1 1  00.0 REPLACED CAPSCREW AND LOCK WASHER IN    646
                                                                    THE LOWER HINGE LOCK PLATE EPR FB-646

PARTS 17C-820H          GP=000011501 NO=01 LIFE= UNK  SCREW, CAP, HEX, HEAD 1/2-13, 1 1/4
         24E-8H            000011501    01       UNK  WASHER,LOCK 1/2 ID, 15/16 UN OD HINGE PIN, COUPLER FRAME
                                                             AND FRAME

08/02/78 2 821.5  68.1  U O O A C N N 1208  00.0  09.8  13.1 3  00.0 REPAIR AS A RESULT OF ACCIDENT REMOVE   714
                                                                    FUEL TANK REMOVE BROKEN BRACKETS MAKE
                                                                    NEW BRACKETS + WELD ON TANK AND REMOUNT
                                                                    TANK. INSTALL NEW ELBOW AIR RESERVOIR,
                                                                    TWO (2) EACH METAL TUBE ASSEMBLIES AND
                                                                    HOSE SERVICE COUPLING STRAIGHTEN OUT
                                                                    ENGINE SIDE PANELS EPR FB-714 (S-1)

PARTS 8-8-37-6          GP=000011208 NO=01 LIFE=UNK   AIR RESERVOIR
       540707              000011208    01       UNK  ELBOW
       2547948             000011211    01       UNK  TUBE ASSY, METAL
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,943
 D          S OHR   A     T S E E T Q A C   G  CD    CH     MH     M OT                                   E
 A          H DON   C     A / C C M A M S   R  OL    LO     AO     E IT                                   P
 T          F OUD   T     S U H H *   T F   P  NY    OU     NU     N AM                                   R
 E          T MRS   N     K     R S            T     CR     R        GE                                   S
                                                     KS                    DESCRIPTION

      2547946                   000011211     01     UNK    TUBE ASSY, METAL
      7007-67                   000011211     01     UNK    COUPLING,HOSE SERVICE

02/03/78 1 822.7 069.0  U O O A M Y Y 0613  00.0  00.7  00.7 2  00.2 RECONNECTED LOOSE CONNECTOR ON          811
                                                                     TRANSMISSION WIRING HARNESS, REPLACED 2
                                                                     ELECTRICAL SUPPRESSORS. EPR FB-811

PARTS 2544959             GP= 00010613 NO=02 LIFE= UNK  SUPPRESSOR, ELECTRICAL TRANSMISSION SOLENOIDS

08/03/78 1 823.7  70.0  U O O A M N N 1801  00.0  00.9  01.8 2  00.0 REMOVED ROPS, CANVAS AND CAB FRAME EPR  863
                                                                     FB-863

14/03/78 1 825.1  71.0  U O O A M N N 2407  00.0  00.5  00.5 1  00.0 ADJUSTED DOLLY WHEEL CYLINDER PRESSURE   894
                                                                     EFR FB-894

24/03/78 1 827.6  72.0  U C C A M Y N 0000  00.0  00.1  00.1 1  00.0 REPLACED WARNING DECAL ON PWR SECT. EPR  912
                                                                     FB-912

PARTS 1511711             GP=          NO=01 LIFE= UNK  DECAL, WARNING, POWER SECTION

08/04/78   834.6 073.0  U O O A   Y Y 2401         9.1  26.0 3     REPLACED TANDEM HYDRAULIC PUMP EPR       940
                                                                     FB-940
CRITICALITY FACTOR= 1.00

PARTS S230-19(552161)     GP=000012401 NO=01 LIFE=  240 PUMP TANDEM.

08/04/78 1 834.6 073.0A U F F A M Y Y 0710         8.0  16.0 2     REPLACED GASKET ON REAR OF TRANSMISSION  941
                                                                     ASSEMBLY. EPR FB-941
CRITICALITY FACTOR= 1.00

PARTS 231781              GF=000010710 NO=01 LIFE=      GASKET

08/04/78   834.6 073.0B U C C A   Y N 0304         0.2   0.2 1     REPLACED AIR CLEANER ELEMENT EPR FB-942  942

PARTS P11-7437            GP=000010304 NO=01 LIFE=  328 FILTER ELEMENT AIR, OUTER
      P11-9373                000010304   01        328 FILTER ELEMENT, AIR, INNER

08/04/78   834.6 073.0C U O O A   Y N 0608         1.0   1.0 1     REPLACED TRANSMISSION DIRECTIONAL        942
                                                                     CONTROL HANDLE. EPR FB-942

PARTS 2546584             GP=000010608 NO=01 LIFE=  170 SWITCH ELEC. CONTROL W/HANDLE
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,943
 D          S OHR   A     T S E E T Q A C   G  CD     CH     MH     M DT                                      E
 A          H DON   C     A / C C M A M S   R  OL     LO     AO     E IT                                      P
 T          F OUO   T     S U M H '   T F   P  NY     OU     NU     N SH                                      R
 E          T MPS   N     K     R S            T      CR     R       GE                                       S
                                                      KS                    DESCRIPTION

08/04/78   834.6 073.0D U C C A    N N 0612          0.3    0.3 1      CLEANED AND SERV BATTERY BOX          942
                                                                     BATTERIES EPR FB-942

08/04/78   834.6 073.0E U O O A    N N 0612          0.1    0.1 1      TIGHTENED CABLE LEAD CONNECTION ON    942
                                                                     MASTER SWITCH EPR FB-942

08/04/78   834.6 073.0F U C C A    N N 1208          0.1    0.1 1      TIGHTENED AIR LINE CLAMP BOLT EPR     942
                                                                     FB-942

08/04/78   834.6 073.0G U O O A    N N 0108          0.2    0.2 1      REMOUNTED EXHAUST PIPE AND TIGHTENED  942
                                                                     CLAMPS. EPR FB-942

08/04/78   834.6 073.0H U N O A    N N 0101          0.2    0.2 1      REPLACE CRANKCASE BREATHER EPR FB-942 942

PARTS 255180            GP=000010105 NO=01 LIFE=        BREATHER CRANKCASE

08/04/78   834.6 073.0I U O O A    Y Y 0710          0.1    0.1 1      TIGHTEN TRANSMISSION OUTPUT SHAFT     942
                                                                     HOUSING MOUNTING BOLTS. EPR FB-942

08/04/78   834.6 073.0J U O O A    Y N 0613          0.1    0.1 1      REPLACED TRANSMISSION CONTROL WIRING  942
                                                                     HARNESS RETAINING STRAPS. EPR FB-942

PARTS SST2M-4           GP=   010609 NO=01 LIFE=        CABLE TIE

08/04/78   834.6 073.0K U C C A    N N 0900          0.1    0.1 1      TIGHTEN MIDMOUNT PROPELLER SHAFT BOLTS. 942
                                                                     EPR FB-942

08/04/78   834.6 073.0L U C C A    N N 2402          0.1    0.1 1      TIGHTEN LOCK NUTS ON TRANSMISSION     942
                                                                     DISCONNECT ROD. EPR FB-942

08/04/78   834.6 073.0M U C C A    N N 0721          0.1    0.1 1      TIGHTENED TRANSMISSION DIPSTICK TUBE  942
                                                                     SUPPORT CLAMP. EPR FB-942

08/04/78   834.6 073.0N U N N A    N N 24[illegible]          0.1    0.1 1      TIGHTEN FITTING ON HYDRAULIC LINE AT  942
                                                                     DOLLY WHEEL CYLINDER. EPR FB-942

08/04/78   834.6 073.0O U C C A    N N 2403          0.1    0.1 1      TIGHTEN DOLLY WHEEL CONTROL LEVER JAM 942
                                                                     NUT. EPR FB-942

08/04/78   834.6 073.0P U C C A    N N 2406          0.1    0.1 1      INSTALL QUICK DISCONNECT CAP ON       942
                                                                     HYDRAULIC LINE. EPR FB-942

PARTS C-25              GF=000012406 NO=01 LIFE=        CAP QDISC
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,943
 D          S OHR   A    I S E E T Q A C   G  CO     CH     MH     M DT                                        E
 A          H DON   C    A / C C M A M S   R  OL     LO     AO     E IT                                        P
 T          F OUD   T    S U H H '   T F   P  NY     OU     NU     N AM                                        R
 E          T HRS   N    K     R S            T      CR     R       GE                                         S
                                                     KS                      DESCRIPTION

08/04/78    834.6 073.0Q U C C A     N N 2406        0.1    0.1 1        TIGHTEN HYDRAULIC LINE FITTING AT      942
                                                                       COUPLER LOCK EPR FB-942

08/04/78    834.6 073.0R U O O A     Y N 2202        0.3    0.3 1        REPLACED WINDSHIELD WIPER CONTROL VALVE 942
                                                                       EPR FB-942

PARTS GF-220            GP=000012202 NO=01 LIFE=       VALVE PARKING PRESS.

08/04/78 1  834.6 073.0S U F F A M Y Y 0613         10.0   20.0 2  16.0 TROUBLESHOOTED TRANSMISSION ELECTRICAL   943
                                                                       WIRING-TRANSMISSION FAILED TO SHIFT
                                                                       PROPERLY. SEE EPR FB-943
CRITICALITY FACTOR= 1.00

PARTS 254884            GP=000010613 NO=01 LIFE=       WIRING HARN. XMSN

06/10/78 1  1036   74.0  S C C A C N N 0000         0.3    0.6 2        COUPLED TO SCRAPER WORK SECTION T-948  1121
                                                                       AT LIFE PERIOD 721.0 HRS EPR FB-1121

11/10/78 1  1051   75.0  S C C A C Y N 0000         0.6    1.2 2        PERFORMED 50 HR SERVICE. EPR FB-1122   1122

13/10/78 1  1068   76.0  U O O A C Y N 0107         0.3    0.3 1        REPLACED DEFECTIVE 1ST GEAR SOLENOID.  1123
                                                                       EPR FB-1123

PARTS 236402            GP=    010710 NO=01 LIFE=       SOLENOID

17/10/78 1  1076   77.0  U O O A C Y Y 2406         2.7    2.7 1        REPLACED PREFORMED PACKING AT TANDEM   1125
                                                                       PUMP. EPR FB-1125

PARTS 58K-222           GP=     01240 NO=60 LIFE=1     PACKING, PREFORMED

17/10/78 1  1078   78.0  U C C A C N N 0000         0.2    0.2 1        ADDED 1 GAL ENGINE OIL

17/10/78 1  1078   79.0  U C C A C Y N 0000         0.5    0.5 1        ADDED 16 GALS HYDRAULIC OIL BECAUSE OF
                                                                       MAJOR LEAK

26/10/78 1  1086   80.0  U O O A C Y N 2406         0.6    0.6 1   0.1 REPLACED HYDRAULIC LINE. EPR FB-1127     1127

PARTS 56.5,242R4-JSN4-J90 GP=  012406 NO=01 LIFE=       HOSE ASSY,NM 56.50,242R4-JSN4-J90SL4

27/10/78 1  1090   81.0  U C C A C N N 0000         0.2    0.2 1        ADDED 6 QTS HYDRAULIC OIL
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,943
 D       S OHR    A     T S E E T Q A C   G  CO     CH     MH    M OT                                E
 A       H DON    C     A / C C M A M S   R  OL     LO     AO    E IT                                P
 T       F OUD    T     S U H H '   T F   P  NY     OU     NU    N AM                                R
 E       T HRS    N     K     R S            T      CR     R      GE                                 S
                                                    KS                  DESCRIPTION

28/10/78 1  1096  82.0  U O O A C N N 0505         0.3   0.3 1         REPLACED FUEL FILTER. EPR FB-1129       1129

PARTS 299080             GP=   010505 NO=01 LIFE=       FILTER,FUEL

30/10/78 1  1103  83.0  S C C A C Y N 0000        00.8   2.4 3         PERFORMED 50 HR SERVICE. EPR FB-1132    1132

31/10/78 1  1108  84.0  U C C A C N N 0000         0.2   0.2 1         ADDED 2 QTS ENGINE OIL

02/11/78 1  1119  85.0  U F F A C Y Y 1410         0.8   1.0 1     0.2 REPLACED BEARING IN STEERING WITH       1135
                                                                         RETROFIT. EPR FB-1135

PARTS SB220655           GP=   011410 NO=01 LIFE=       BEARING, STEERING ASSY

13/11/78 1 01141  86.0  U C C A C N N 0000         0.2   0.2 1         ADDED 3.5 GAL HYDRAULIC OIL

14/11/78 1 01144  87.0  U O O A C Y Y 2406         3.8   4.4 2         REPLACED O RING. EPR FB-1144            1144

PARTS 58K-219            GP=   012406 NO=01 LIFE= 1144 PACKING, PREFORMED 1-5/16 ID, 1-9/16 OD

15/11/78 1  1152  88.0  U C C A C N N 0000         0.2   0.2 1         ADDED 9 QTS HYDRAULIC OIL

15/11/78 1 01152  89.0  U C C A C N N 0000         0.2   0.2 1         ADDED 2 QTS ENGINE OIL

16/11/78 1  1153  90.0  U F F A C Y Y 2406         1.2   2.4 2     0.1 REPLACED PREFORMED PACKING ON PIPE      1146
                                                                         CONNECTION TO TUBE ASSY AND BETWEEN
                                                                         TUBE ASSY AND RELIEF VALVE, MAIN
                                                                         HYDRAULIC SYSTEM. EPR FB-1146

PARTS 58K-219            GP=   012406 NO=03 LIFE=       PREFORMED PACKING

16/11/78 1  1154  91.0  U O O A C Y N 2406         0.3   0.3 1     0.1 REPLACED ELBOW ON HOSE ASSY AT THE TWO   1146
                                                                         WAY VALVE. EPR FB-1146

PARTS J90SL-4            GP=   012406 NO=01 LIFE=       90 DEG ELBOW ON HOSE ASSY 56.50,242R4-JSN4-J90SL4

16/11/78 1 01154  92.0  S C C A C Y N 0000         0.3   0.3 1         50 HR SERVICE. NO FLUIDS ADDED. EPR     1148
                                                                         FB-1148

17/11/78 1  1159  93.0  U C C A C N N 0000         0.2   0.2 1         ADDED 2 GAL TRANSMISSION OIL
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U3/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,943
 D        S OHR   A     T S E E T Q A C   G  CD    CH     MH     H DT                                        E
 A        H DON   C     A / C C H A M S   R  OL    LO     AO     E IT                                        P
 T        F OUD   T     S U H H '   T F   P  NY    OU     NU     N AM                                        R
 E        T HRS   N     K     R S             T    CR     R        GE                                        S
                                                   KS                    DESCRIPTION

18/11/78 1  1166  94.0  U C C A C N N 0000         0.2    0.2 1       ADDED 1 GAL TRANSMISSION OIL

21/11/78 1  1178  95.0  U O O A C Y N 2406         0.3    0.3 1       REPLACED ELBOW ON HOSE ASSY AT TWO WAY    1151(1146-1)
                                                                    VALVE. EPR FB-1151(1146-1)

PARTS J90SL-4              GF=   012406 NO=01 LIFF=       90 DEG ELBOW ON HOSE ASSY 56.50,242R4-JSN4-J90SL4

25/11/78 1  1188  96.0  U O O I C Y Y 0613         3.0    3.0 1   2.7 CHECKED HYDRASTATIC DRIVE CONTROL         1153
                                                                    CIRCUIT AND REPAIRED BROKEN WIRE IN
                                                                    HARNESS.EPR FB-1153

27/11/78 1  1094  97.0  U O O A C Y N 1301         3.0    6.0 2       REPLACED WORN CURBSIDE TIRE. EPR          1154
                                                                    FB-1154

PARTS 1638885              GP=   011301 NO=01 LIFF=       FACKING, PREFORMED
      2507913                    011301    01             TIRE PNEUMATIC

29/11/78 1  1199  98.0  S C C A C N N 0000         0.3    0.6 2       PERFORMED 50 HR SERVICE. EPR FB-1155 ,    1155

29/11/78 1  1199  98.1  U O O A C Y N 1208         0.5    0.5 1       ADJUSTED SERVICE BRAKES. EPR FB-1158      1158

29/11/78 1  1199  99.0  U O O I C N N 0101         1.5    1.5 1       RWELDED FULL FLOW OIL FILTER MOUNTING     1160
                                                                    BRACKET AND REINSTALLED OM VEHICLE. EPR
                                                                    FB-1160

30/12/78 1  1201 100.0  S C C A C N N 0608         0.3    0.3 1   0.1 REPLACED LAMP IN LOCK-UP INDICATOR. EPR   1161
                                                                    FB-1161

PARTS 2547368              GP=   010608 NO=01 LIFF=       LAMP, LOCK-UP ACTUATOR

30/11/78 1  1201 101.0  S C C A C N N 0609         0.3    0.3 1       REPLACED REAR ROADSIDE FLCODLIGHT ASSY.   1162
                                                                    TIME SHOULD BE CHARGED TO OT 2 TEST EPR
                                                                    FB-1162

PARTS 1030287              GP=   010609 NO=01 LIFF=       FLOODLIGHT ASSY, REAR ROADSIDE

30/11/78 1  1201 102.0  U O O A C N N 1311         0.5    1.0 2   0.1 REPLACED PREFORMED PACKING ON ROADSIDE    1163
                                                                    WHEEL, EPR FB-1163

PARTS 168388852            GP=   011311 NO=01 LIFF=       PREFORMED PACKING, ROADSIDE WHEEL ASSY
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,943
D        S OHR   A     T S F E T Q A C   G  CO     CH     MH    M OT                                        E
A        H DCN   C     A / C C M A M S   R  OL     LO     AO    E IT                                        P
T        F OUD   T     S U H H *   T F   P  NY     OU     NU    N AM                                        R
E        T MRS   N     K     R S            T      CR     R       GE                                        S
                                                   KS                  DESCRIPTION

30/11/78 1  1203 103.0  U O O A C Y N 0309         1.0    1.0 1        REPLACED AIR FILTERS, FUEL CARTRIDGE, &  1164
                                                                     FUEL FILTERS. EPR FB-1164

PARTS 11911724              GP=    010304 NO=01 LIFE=203.0 AIR FILTER, INNER
      960243                       010304    01      203.0 AIR FILTER, OUTER
      102629                       010309    02      203.0 CARTRIDGE, FUEL FILTER
      35070                        010309    01      203.0 CARTRIDGE, FUEL FILTER

01/12/78 1  1203 104.0  U C C A C N N 0000         0.2    0.2 1        ADDED 2 QTS TRANSMISSION OIL

01/12/78 1  1203 105.0  U O O A C Y N 0312         9.0   18.0 2   0.5 REPLACED THROTTLE SLAVE CYLINDER. EPR      1165
                                                                     FB-1165

PARTS WM388-UIC2B           GP=    010312 NO=01 LIFE=       SLAVE CYLINDER, ENGINE TOP CENTER

02/12/78 1  1204 106.0  S O O A C Y N 2402         1.0    1.0 1   0.2 ADJUSTED HYDRAULIC PUMP ACTUATOR           1166
                                                                     (PROPORTIONAL VALVE). EPR FB-1166

07/12/78 1  1219 107.0  U O O A I Y N 0612         0.5    0.5 1        PRIME FUEL SYSTEM & JUMP START            1167
                                                                     BATTERIES. EPR FB-1167

06/12/78 1  1220 108.0  U C C A C N N 0000         0.1    0.1 1        ADDED 1 QT TRANSMISSION OIL

11/12/78 1  1224 109.0  U C C A C N N 0000         0.2    0.2 1        ADDED 4 GALS HYDRAULIC OIL

12/12/78 1  1230 110.0  U C C A C N N 0000         0.1    0.1 1        ADDED 2 QTS HYDRAULIC OIL

12/12/78 1  1230 111.0  U C C A C N N 0000         0.1    0.1 1        ADDED 1.5 QTS TRANSMISSION OIL

13/12/78 1  1231 112.0  U C C A C N N 0000         0.1    0.1 1        ADDED 3 QTS OF ENGINE OIL
                                                                     FAMECE19431312781 1231113.0 UCCACNN0000
                                                                     0.3 0.31 ADDED 10 GALS OF HYDRAULIC OIL
                                                                     DUE TO BROKEN PRESSURE SWITCH

27/12/78 1  1238 114.0  S O O A C Y N 0000         7.5   12.4 2        COMPLETED 250 HR MAINTENANCE. NO          1170
                                                                     TRANSMISSION FILTERS REPLACED. USED 32
                                                                     QTS OF OE 30 ENGINE OIL. EPR FB-1170

PARTS MS-35802-3            GP=000010106 NO=02 LIFE=00238 FILTER-ENGINE OIL, FULL FLOW
      9311                     000010106    02      00238 FILTER, ENGINE OIL, BYPASS
      35070                    000010309    01      00035 FUEL FILTER
      5678                     000010309    02      00035 FUEL FILTER
      299080                   000010508    01      00238 FILTER CORROSION RESISTOR
      5690022-03               000010990    01      00238 VENT ASSY, BREATHER-MDMT
      5690022-03               000011100    01      00238 VENT ASSY, BREATHER-AXLE
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,943
 D        S OHR   A    T S E E T Q A C   G  CO    CH    MH    M DT
 A        H DON   C    A / C C M A M S   R  OL    LO    AO    E IT                          E
 T        F OUD   T    S U H H *   T F   P  NY    OU    NU    N AM                          P
 E        T MRS   N    K     R S            T     CR    R       GE                          R
                                                  KS                  DESCRIPTION          S

      5690022-03            000010710   01      00238 VENT ASSY, BREATHER-TRANSMISSION
      960243                000010304   01      00035 FILTER ELEMENT, AIR
      1911724               000010304   01      00035 ELEMENT, SAFETY
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,944
 D         S OHR    A     T S E E T Q A C    G  CD      CH     MH     M OT                                               E
 A         H DON    C     A / C C H A M S    R  OL      LO     AO     E IT                                               P
 T         F OUD    T     S U H H '   T F    P  NY      OU     NU     N AM                                               R
 E         T MRS    N     K     R S             T       CR      R      GE                                                S
                                                        KS                       DESCRIPTION

14/09/77 1 078.2 001.0   S O O A C N N 0000  00.0  00.5  00.5 1  00.0 INITIAL INSPECTION OF VEHICLE ON
                                                                      RECEIPT.

15/09/77 2 078.2 001.0A  S C C A M Y N 1313  00.0  00.2  00.2 1  00.0 ADJUSTED TIRE PRESSURE TO 45 P.S.1 THE
                                                                      TIRE PRESSURE WAS TOO HIGH, 55 PS1

22/09/77 2 103.8   1.1   S C C A M Y N 0000         0.4   0.8 2  00.0 PERFORMED 50 HR MAINTENANCE PER LUBE     1049
                                                                      ORDER L05-3840-202-12 EPR FB-1049

24/09/77   106.9 001.2   U O O I C Y Y 7436  00.0   1.5  01.5 1  00.0 REPAIRED CRACK IN ROD END ASSY BY         195.
                                                                      WELDING TWO PIECES OF ANGLE IRON ON
                                                                      OPPOSITF SIDES OF CRACK?ONE HOUR# AND
                                                                      INSTALLED MODIFIED LINK. EPR FB-195.
CRITICALITY FACTOR= 1.00

24/09/77 2 106.9 001.2A  U C C A M Y N 7436  00.0  00.1  00.1 1  00.0 SHIFTED SKID SHOES END FOR END FOR EVEN  174
                                                                      WEAR DISTRIBUTION. EPR FB-174

26/09/77 1 117.0   2.0   U C C A M Y N 7435  00.0  00.2  00.2    00.0 SCARIFIER TOOTH PIN REPLACED, FELL OUT   202
                                                                      DURING OPERATION EPR FB-202

27/09/77 1 124.6 003.0   U O O A M Y Y 7435  0000  02.3   4.0 2  00.0 1. REMOVED AND REPLACED END BITS ON      203
                                                                      DOZER BLADE 2. CENTER CUTTING EDGE
                                                                      REVERSED EPR FB-203
CRITICALITY FACTOR= 1.00

 PARTS FP/N 2549558         GP=000027435 NO=00 LIFE=UNK    END BIT LH
       P/N2549559              000027435    01      UNK    END BIT RH

27/09/77 1 127.2 004.0   U C C A M Y N 7436  00.0  00.5  01.0 2  00.0 ADJUSTED MANUAL TILT LINK. THIS HAPPENS  209
                                                                      FREQUENTLY AND REQUIRES 1 HR ADJUSTMENT
                                                                      EACH TIME. EPR FB-209

28/09/77 1 143.4 004.1   U O O A M N N 1802  00.0  00.5  00.9 2         THE LEFT FRONT FENDER WAS STRAIGHTENED  221
                                                                      BY THE USE OF A CHAIN. EPR FB-221

29/09/77 1 155.0   4.2   S C C A M Y N 0000         0.4   0.8 2  00.0 PERFORMED 50 HR MAINTENANCE PER LUBE     1061
                                                                      ORDER L05-3840-202-12 EPR FB-1061

04/10/77 1 200.0 004.3   S C C A M Y N 0000  00.0  00.3  00.6 2  00.0 PERFORMED 50 HOUR MAINTENANCE EPR        1106
                                                                      FB-1106
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,944
 D        S OHR   A     T S E E T Q A C   G  CD     CH     MH     M DT                                    E
 A        H DON   C     A / C C M A M S   R  OL     LO     AO     E IT                                    P
 T        F OUD   T     S U H H '   T F   P  NY     OU     NU     N AM                                    R
 E        T HRS   N     K     R S            T      CR     R       GE                                     S
                                                    KS                      DESCRIPTION

13/10/77 1 248.9 004.4  S O O A M Y N 0000  00.0  00.7  01.4 2  00.0 PERFORMED 250 HR MAINTENANCE PER LUBE     1081
                                                                     ORDER LO5-3840-202-12. ADDED 1 QT OF 90
                                                                     WT OIL TO WINCH HOUSING. ADDED 8
                                                                     SQUIRTS OF OIL TO MID MOUNT. EPR
                                                                     FB-1081

PARTS 569022-03           GP=000020900 NO=01 LIFE=       VENT ASSY, BREATHER, MIDMOUNT
      569022-03              000021000    01             VENT ASSY, BREATHER, AXLE
      AC43887                000021204    01             FILTER ELEMENT, FL, POWER CLUSTER

13/10/77 2 249.6 005.0  U C C A M N N 7435  00.0  00.1  00.1 1  00.0 RE INSERT SHOULDER PIN ON SCARIFIER       1103
                                                                     TOOTH. THE PIN HAD ALMOST WORKED
                                                                     COMPLETELY OUT EPR FB-1103

15/10/77 2 278.6 006.0  S C C A M Y N 7435  00.0  00.2  00.2 1  00.0 INSTALL NEW R.H. END BIT IN THE DOZER     246(203-1)
                                                                     BLADE ASSY (TO REPLACE WORN R.H. END
                                                                     BIT) EPR FB-246(203-1)

PARTS 2549559             GP=000027435 NO=01 LIFE=154.0 R.H. END BIT

15/10/77 2 278.6 006.0A S C C A M Y N 7435  00.0  01.0  01.0 1  00.0 INSTALL NEW CENTER CUTTING EDGE IN THE    247(203-1)
                                                                     DOZER BLADE ASSY. (TO REPLACE WORN
                                                                     CUTTING EDGE) EPR FB-247(203-1)

PARTS 2546108             GP=000027435 NO=01 LIFE=278.6 CENTER CUTTING EDGE

15/10/77 2 278.6 006.0B S C C A M Y N 7435  00.0  00.2  00.2 1  00.0 INSTALL NEW L.H. END BIT IN THE DOZER     246(203-1)
                                                                     BLADE ASSY (TO REPLACE WORN BIT) EPR
                                                                     FB-246(203-1)

PARTS 2549558             GP=000027435 NO=01 LIFE=154.0 L.H. END BIT

18/10/77 1 290.8 007.0  U O O A M Y N 1313  00.0  00.3  00.3 1  00.0 INFLATED LEFT FRONT TIRE TO 55PSI. TIRE
                                                                     PRESSURE WAS LOW AT 30PSI.

18/10/77 2 304.4 008.0  U C C A M Y N 2407  00.0  00.2  00.2 1  00.0 REPLACE TWO LUBRICATION FITTINGS EPR       299
                                                                     FB-299

PARTS MS15001-1           GP=000022407 NO=02 LIFE=UNK    FITTING, GREASE
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,944
 D         S OHR    A     T S F E T Q A C    G  CD      CH      MH     M OT                                          E
 A         H DON    C     A / C C M A M S    R  OL      LO      AO     E IT                                          P
 T         F OUD    T     S U H H '   T F    P  NY      OU      NU     N AM                                          R
 E         T MRS    N     K     R S             T       CR       R       GE                                          S
                                                        KS                        DESCRIPTION

19/10/77 1 304.5 009.0  S C C A M N N 0000           0.2    0.4 2        PERFORMED 50 HR. MAINTENANCE PER LUBE     1084
                                                                       ORDER L05- -202-12. EPR FB-1084

25/10/77 1 346.3 010.0  U O O A M Y N 1802  00.0  00.4   00.4 1  00.0 REMOVED LEFT FRONT FENDER ON WORK           1118
                                                                       SECTION (DOZER). THE FENDER WAS BOTH
                                                                       BENT AND BROKEN AT THE TOP BRACE. EPR
                                                                       FB-1118

25/10/77 2 351.7 011.0  S C C A M Y N 0000           0.2    0.2 1        PERFORMED 50 HR. MAINTENANCE PER LUBE     1085
                                                                       ORDER L05- -202-12. EPR FB-1085

25/10/77 1 352.6 012.0  U C C A M Y N 7435  00.0  00.1   00.1 1  00.0 REMOVED SCARIFIER TOOTH SHANK (TOOTH         302
                                                                       MISSING). EPR FB-302

28/10/77 2 376.1 012.0A U O O A M N N 1802  00.0  02.0   04.0 2  00.0 STRAIGHTEN OUT FENDER - WELD ON GUSSETT   303(S-1)
                                                                       MOUNT FENDER EPR FB-303(S-1)

03/11/77 1 401.1 012.1  S C C A M Y N 0000  00.0  00.1   00.2 2  00.0 PERFORMED 50 HOUR MAINTENANCE EPR           1086
                                                                       FB-1086

08/11/77 1 444.1 013.0  U O O A M Y Y 7436  00.0  00.4   00.8 2  00.0 REPLACED ADJUSTABLE TILT LINK REMOVED       309
                                                                       DAMAGED TILT LINK AND INSTALLED NEW ONE
                                                                       WITH NO MODIFICATIONS. ASSY WAS
                                                                       LUBRICATED AFTER INSTALL- ATION. EPR
                                                                       FB-309
CRITICALITY FACTOR= 1.00

PARTS 2544519              GP=000027436 NO=01 LIFE=393.9 ADJUSTABLE TILT LINK LOCATED ON CURBSIDE OF VEHICLE AT THE
                                                             DOZER BLADE.

08/11/77 2 444.4 013.1  U C C A M Y N 7436  00.0  00.9   00.9 1  00.0 REPLACED 2 WORN OUT SKID SHOES EPR          313
                                                                       FB-313

PARTS 2546023              GP=000027436 NO=02 LIFE=UNK   SKID SHOE

09/11/77 1 451.0 014.0  S C C A M Y N 0000  00.0  00.1   00.2 2  00.0 PERFORMED 50 HOUR MAINTENANCE EPR           1087
                                                                       FB-1087

09/11/72 2 456.9 015.0  U O O A M Y Y 2406  00.0  00.3   00.3 1  00.0 TIGHTEN LOOSE HYDRAULIC HOSE ASSY           315
                                                                       CONNECTOR AT THE MANIFOLD EPR FB-315
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,944
 D          S OHR   A    T S F E T Q A C   G  CD     CH     MH     M DT                                            E
 A          H DON   C    A / C C M A M S   R  OL     LO     AO     E IT                                            P
 T          F OUD   T    S U H H *   T F   P  NY     OU     NU     N AM                                            R
 E          T MRS   N    K     R S            T      CR      R      GE                                             S
                                                     KS                      DESCRIPTION

14/11/77 1 506.0 016.0  U C C A M Y N 7436  00.0  00.1  00.2 2  00.0 REPLACED NUTS AND BOLTS ON SKID SHOES.     317
                                                                     EPR FB-317

PARTS 170-54              GP=000027436 NO=16 LIFE=UNK    NUT, SLFLKG, HEXAGON
      1552064                000027436    16      UNK    BOLT, PLOW

14/11/77 2 506.3 017.0  S O O A M Y N 0000  00.0  02.0  02.9 2  00.0 500 HR. MAINTENANCE EPR FB-316             316

PARTS 569022-03           GP=000020900 NO=01 LIFE=257.4 VENT ASSY, BREATHER, MIDMOUNT
      569022-03              000021000    01      257.4 VENT ASSY, BREATHER, AXLE
      AC43887           2    0000 1204    01      257.4 FILTER ELEMENT, FL, POWER CLUSTER

14/11/77 2 506.3 017.0A U O O A M N N 1208  00.0  00.6  01.2 2  00.0 REPLACE BROKEN FITTINGS ON AIR MANIFOLD    318
                                                                     ASSY. EPR FB-318

PARTS 89F5                GP=000021208 NO=01 LIFE=UNK    ADAPTER
      89F3                   000021208    01      UNK    CONNECTOR, AIR HOSE
      727-4-4                000021208    02      UNK    HOSEENO

15/11/77 2 508.7 018.0  U O O I M Y Y 1208  00.0  00.5  00.6 2  00.2 DISCONNECTED 2 AIR HOSES AND               319
                                                                     RECONNECTED PROPERLY EPR FB-319

17/11/77 1 532.3 019.0  U O O A M Y Y 7435  00.0  00.8  01.6 2  00.0 REPLACED (4) SCARIFIER TEETH,REPLACED      321(S-1)
                                                                     (2) SHANKS,REPLACED (4) PINS EPR
                                                                     FB-321(S-1)

PARTS R150258             GP=      027435 NO=04 LIFE=369.3 TOOTH, SURP RIPPING
      R135388                      027435    04      369.3 PIN STRAIGHT, HEADED
      R112228                      027435    02      369.3 SHANK-TOOTH, SURF. RPG,

21/11/77 1 563.3 019.0A S O O A M Y N 0000         0.2   0.2 1        50 HR LUBRICATION PER LO5-3840-202-12.    1088
                                                                     42 ML HD-EO TO MIDMOUNT BEARING EPR
                                                                     FB-1088

21/11/77 1 563.3 019.1  U O O A M N N 1208  00.0  00.9  00.9 1  00.0 REPLACED 2 BROKEN AIR HOSE CONNECTORS      325
                                                                     IN THE AIR MANIFOLD EPR FB-325

PARTS 8M-6JMS             GP=000021208 NO=02 LIFE=68.1C ONNECTOR, AIR HOSE

21/11/77 2 564.7 020.0  U O O A M Y Y 7435  00.0  02.0  04.0 2  00.0 CENTER CUTTING EDGE WORN CUT. REVERSED     326
                                                                     EDGE + REINSTALLED EPR FB-326
CRITICALITY FACTOR= 1.00
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,944
 D          S OHR    A      T S E E T Q A C    G  CD       CH       MH      M OT                                          E
 A          M OON    C      A / C C M A M S    R  OL       LO       AO      E IT                                          P
 T          F OUD    T      S U H H *   T F    P  NY       OU       NU      N AM                                          R
 E          T HRS    N      K     R S             T        CR       R         GE                                          S
                                                           KS                      DESCRIPTION

29/11/77 1 566.5 020.1  U C C A M Y N 7435  00.0  00.8  01.6 2  00.0 INSTALLED REBUILT END BITS, LH&RH. EPR     326(S-1)
                                                                   FB-326(S-1)

29/11/77 2 566.5 021.0  U O O A M Y Y 0900  00.0  00.2  00.2 1  00.0 SWITCHED AIR LINES TO MIDMOUNT             327(319-1)
                                                                   PNEUMATIC ACTUATOR. THESE LINES HAD
                                                                   BEEN CONNECTED IMPROPERLY DURING A
                                                                   PREVIOUS REPAIR. EPR FB-327(319-1)

03/12/77 1 605.7 022.0  S C C A M Y N 0000  00.0  00.3  00.3 1  00.0 PERFORMED 50 HR MAINTENANCE EPR FB-682     682

05/12/77 1 617.7 023.0  U O O A C Y Y 1802  00.0  00.9  01.8 2  00.0 STRAIGHTENED AND WELDED TORN FLANGES ON    683
                                                                   CURBSIDE FENDER EPR FB-683

03/01/78 1 686.0  24.0  U O O A M Y Y 7435  00.0  00.4  00.8 2  00.0 REPLACED LEFT AND RIGHT HAND END BITS      458(S-1)
                                                                   EPR FB-458(S-1)
CRITICALITY FACTOR= 1.00

 PARTS 2549559               GP=000027435 NO=01 LIFE=205.4 BIT,RIGHT
       2549558                  000027435    01       205.4 BIT,LEFT

12/01/78 2 751.8 025.0  U C C A M Y N 7435  00.0  01.4  02.8 2  00.0 REMOVED AND REPLACED CENTER CUTTING        539(203-3)
                                                                   EDGE EPR FB-539(203-3)

12/01/78 2 751.8 025.0A U C C A M Y Y 7435  00.0  00.1  00.2 2  00.0 REMOVED LEFT AND RIGHT END BITS EPR        539(S-1).
                                                                   FB-539(S-1).
CRITICALITY FACTOR= 1.00

17/01/78 1 755.0 026.0  S O O A M Y N 0000  00.0  01.6  01.8 1  00.0 PERFORMED 250 HOUR MAINTENANCE EPR         558.
                                                                   FB-558. ADDED 15 ML OIL TO MIDMOUNT.

 PARTS 569022-03             GP=000020900 NO=01 LIFE=248.7 VENT ASSY, BREATHER, MIDMOUNT
       569022-03                000021000    01       248.7 VENT ASSY, BREATHER, AXLE
       AC43887                  000021204    01       248.7 FILTER ELEMENT, FL, POWER CLUSTER

18/01/78 1 758.4 027.0  U O O A M Y Y 0609  00.0  00.4  00.4 1  00.0 REPLACED BOTH SERVICE HEADLIGHT LAMPS      561
                                                                   EPR FB-561

 PARTS 4880                  GP=000020609 NO=02 LIFE=UNK    LAMP

18/01/78 1 758.4 027.0A U O O A M Y N 0609  00.0  00.6  00.6 1  00.0 REMOVED, STRAIGHTENED, AND REINSTALLED     562
                                                                   WIRE MASK ASSEMBLY EPR FB-562
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03/05/79
MAINTENANCE TASK LOG     TEST ,FAMECE1 TEST ITEM ,944
 D         S OHR   A     T S F E T Q A C   G  CD    CH     MH    M OT                                        E
 A         H DON   C     A / C C M A M S   R  OL    LO     AO    E IT                                        P
 T         F OUD   T     S U H H *   T F   P  NY    OU     NU    N AM                                        R
 E         T HRS   N     K     R S            T     CR     R      GE                                         S
                                                    KS                  DESCRIPTION

23/01/78 2 758.1 028.0  S O O A M Y N 7435          00.8  02.4 3  00.0 INSTALLED LH + RH END BITS EPR           539(S-2).
                                                                      FB-539(S-2).

PARTS 2549559              GP=000027435 NO=01 LIFF=043.1 END BIT, RH
      2549558                 000027435    01      043.1 END BIT, LH

01/02/78 2 815.5 029.0  S C C A M Y N 0000  00.0  00.5  01.0 2  00.0 PERFORMED 50 HOUR MAINTENANCE EPR        619
                                                                      FB-619

02/02/78 2 819.1 030.0  U O O A M N N 7436  00.0  00.5  01.0 2  00.0 INSTALLED NEW ADJUSTABLE TILT LINK AS    649
                                                                      PER CEC ECN 1559 EPR FB-649

PARTS 2543104              GP=000027436 NO=01 LIFF=375.0 TILT LINK, ADJUSTABLE

02/02/78 2 819.1 030.0A U O O A M N N 2001  00.0  00.5  00.5 1  00.0 INSTALLED NEW GUARD, WINCH CABLE AS PER  700
                                                                      CEC ECN 1559 EPR FB-700

PARTS UNKNOW               GP=000022001 NO=01 LIFE=UNK   GUARD, WINCH CABLE

08/02/78 1 819.5 031.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.1 ADDED 1 GALLON OF FLUID TO TRANSMISSION

08/02/78 1 819.5 031.0A U C C A M Y N 7435  00.0  00.1  00.1 1  00.0 REPLACED MISSING MACHINE BOLT AND LOCK   715
                                                                      NUT WITH A SUBSTITUTE BOLT AND NUT OF
                                                                      LIKE SIZE. RECCOMENDED BOLT AND NUT NOT
                                                                      AVAILABLE IN MTSP. EPR FB-715

08/04/78   834.6 032.0  S C C A   Y N 1313         3.0   6.0 2        REPLACED TIRES. EPR FB-945              945

PARTS 2507913              GP=000021313 NO=02 LIFF=      TIRE PNEUMATIC
      811398                  000021313    02            PACKING PREFORMED

08/04/78   834.6 032.0A U C C A   Y N 7435         0.2   0.2 1        REPLACED RIPPER TEETH EPR FB-945        945

PARTS R112228              GP=000027435 NO=02 LIFF=      SHK-TOOTH, SURF RPG
      R150258                 000027435    02            TOOTH, SURF. RIPPING

08/04/78   834.6 032.0B U O O A   N N 0613         0.2   0.2 1        REMOUNTED WIRING HARNESS PROTECTOR EPR  945
                                                                      FB-945

08/04/78   834.6 032.0C U C C A   N N 1802         0.1   0.1 1        TIGHTENED FENDER MOUNTING BRACKET       945
                                                                      BOLTS. EPR FB-945
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,945
 D          S OHR   A    T S E E T Q A C   G  CD     CH     MH    M OT                                        E
 A          H DON   C    A / C C M A M S   R  OL     LO     AO    E IT                                        P
 T          F OUD   T    S U H H '   T F   P  NY     OU     NU    N AM                                        R
 E          T MRS   N    K     R S            T      CR     R       GE                                        S
                                                     KS                DESCRIPTION

31/10/77    00091 001.0  U C C A M Y N 0613  00.0  00.1  00.1 1  00.0 DURING POST-OP INSPECTION, OPERATOR       FFRD501
                                                                      RECONNECTED R.O.P.S. FLOODLIGHT LEADS
                                                                      WHICH HAD BEEN PULLED LOOSE THROUGH
                                                                      CONTACT WITH TREE LIMBS CHECKING,
                                                                      AND/OR RECONNECTING THESE LEADS ARE
                                                                      PRESCRIBED PORTION OF PMCS BY
                                                                      OPERATOR/CREW EPR FB-FFRD501

31/10/77    00093 002.0  U C O A M Y N 1501  00.0  00.1  00.1 1  00.0 DURING MISSION, OPERATOR REMOVED L. H.    FFRD502
                                                                      LADDER ASSEMBLY WHICH HAD BEEN DEFORMED
                                                                      THROUGH ACCIDENTAL CONTACT WITH TREE
                                                                      STUMPDURING CLEARING OPERATION
                                                                      HEDEFORMED LADDER WAS CONTACTING TIRE
                                                                      AND WAS REMOVED TO AVOID FURTHER DAMAGE
                                                                      TO THE TIRE OR ITSELF. THIS ACTION WAS
                                                                      COUNTERACTIVE, CORRECTIVE ACTION
                                                                      DEFERRED EPR FB-FFRD502

01/11/77    00105 003.0  U O O I M Y Y 0610  00.0  00.1  00.1 1  00.0 LEAKING ENGINE OIL PRESSURE SENDER        FFRD504
                                                                      REPLACED. CONDITION DETECTED AND
                                                                      CORRECTED AT POST-OP PMCS BY ORG LEVEL.
                                                                      EPR FB-FFRD504

PARTS 1534135             GP=010610E99 NO=01 LIFE=00105 SENDER, OIL PRESSURE, ENGINE

01/11/77    00105 003.0A U C C A M N N 1501  00.0  00.1  00.1 1  00.0 DURING POST-OP PMCS, OPERATOR,(MIL,)      FFRD504.5
                                                                      STRAIGHTENED LADDER WHICH HAD BEEN
                                                                      DEFORMED DURING MISSION. EPR
                                                                      FB-FFRD504.5

01/11/77    00105 003.0B N O O A M Y Y 0721  00.0  00.4  00.4 1  00.0 ORG LEVEL MAINTENANCE (MIL) REPLACED      FFRD505
                                                                      DAMAGE SECTION OF HOSE AT JUNCTION OF
                                                                      FITTING IN TRANSMISSION AND DIPSTICK
                                                                      TUBE. THEN REPLACED LOST TRANSMISSION
                                                                      OIL AND CHECKED EPR FB-FFRD505

PARTS 2501552             GP=010721816 NO=01 LIFE=00105 HOSE(SECTION)

01/11/77    00105 003.0C U P O H M Y N 1802  00.0  00.1  00.1 1  00.0 LOUVER REPLACED IN WINDSHIELD ASSEMBLY.   FFRD506
                                                                      TASK IS NOT SPECIFICALLY ADDRESSED BY
                                                                      MAC, HOWEVER IT COULD BE CONSIDERED A
                                                                      REPAIR OF THE WINDSHIELD ASSEMBLY WHICH
                                                                      WOULD THEN BE ALLOCATED TO D. S. TASK
                                                                      IS SIMPLE AND COULD BE REASONABLY
                                                                      PERFORMED BY ORG. EXCEPT THAT SMR CODE
                                                                      INDICATES AVAILABILITY OF REPLACEMENT
                                                                      PART AT D. S. EPR FB-FFRD506
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,945
 D         S OHR   A    T S F E T Q A C   G  CD    CH    MH    M DT                                            E
 A         H DCN   C    A / C C M A M S   R  OL    LO    AO    E IT                                            P
 T         F OUD   T    S U H H '  T F    P  NY    OU    NU    N AM                                            R
 E         T MRS   N    K     R S            T     CR    R       GE                                            S
                                                   KS                    DESCRIPTION

PARTS 2545862            GP=011802A99 NO=01 LIFE=       LOUVER, WINDSHIELD ASSEMBLY

01/11/77   00107 004.0  U C C I M Y N 0106  00.0  00.2  00.2 1  00.0 OPERATOR REPLACED TAPERED PIN SECURING   FFRD507
                                                                     LEVER OF FORWARD/REVERSE CONTROL TO
                                                                     IT'S ELECTRICAL SWITCH. TASK WAS EASILY
                                                                     ACCOMPLISHEDWITH O.E.M. TOOLS IN TEN
                                                                     MINUTES. THIS PART FELL OUT BUT WAS NOT
                                                                     LOST, ORIGINAL PART WAS REPLACED. EPR
                                                                     FB-FFRD507

04/11/77   00119 005.0  U C O I M Y Y 0609  00.0  00.1  00.1 1  00.0 OPERATOR (MIL-MECHANIC BYERS) FOUND      FFRD512.5
                                                                     SERVICE HEADLIGHTS WEREE NOT
                                                                     FUNCTIONING. HE THEN LOCALIZED PROBLEM,
                                                                     (FOUND THAT 24%V WAS NOT PRESENT AT
                                                                     LEAD TO LAMP) AND TOOK A COUNTERACTIVE
                                                                     MEASURE, (INTER- CHANGE LEAD WITH ONE
                                                                     FROM COMPOSITE LIGHT). IT SHOULD BE
                                                                     NOTED TRHAT LOCALIZING/ TROUBLESHOOTING
                                                                     AND COUNTERACTIVE MEASURE WERE SAME
                                                                     ACTION. CORRECTIVE ACTION DEFERRED EPR
                                                                     FB-FFRD512.5

02/11/77 1 00125 006.0  U O O A M N N 1802  00.0  00.3  00.7 2  00.0 BRG LEVEL MAINTENANCE REMOVED/REPLACED   FFRD510
                                                                     WINDSHIELD ASSEMBLY. WINDSHIELD HAD
                                                                     BEEN BROKEN THROUGH IMPROPER
                                                                     OPERATIONAL PROCEDURES BEING USED
                                                                     (NOTE: WINDSHIELD WAS REMOVED, THEN
                                                                     REPAIRED, AND SAME ASSEMBLY REPLACED ON
                                                                     VEHICLE ALSO SEE ACTION 7A FOR
                                                                     REPAIR)(MIL PERSONNEL PERFORMED
                                                                     TASK)EPR FB-FFRD510

02/11/77 1 00125 006.0A U F F A C N N 1802  06.0  00.2  00.4 2  00.0 DIRECT SUPPORT(CIV) REPAIRED WINDSHIELD  FFRD510
                                                                     ASSEMBLY BY REPLACING A BROKEN VISION
                                                                     PANEL. (ALSO SEE ACTION7O) EPR
                                                                     FB-FFRD510

PARTS 2545874            GP=011802A99 NO=01 LIFE=00125 VISION PANEL, WINDSHIELD ASSY, OPERATOR SIDE

03/11/77   00150 007.0  U C C A M Y N 0103  00.0  00.0  00.0 1  00.0 DURING MISSION, OPERATOR MIL, CLOSED     FFRD510.7
                                                                     DRAIN VALVE ON FUEL FILTER ENGINE HAD
                                                                     STOPPED, AND COULD NOT BE RESTARTED.
                                                                     NOTE DIAGNOSTIC AND CORRECTIVE TIME WAS
                                                                     30 SECONDS OR 0.0083 HRS. EPR
                                                                     FB-FFRD510.7
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,945
 D          S OHR   A     I S E E T Q A C   G  CO    CH     MH    M OT                                                    E
 A          H DON   C     A / C C M A H S   R  OL    LO     AO    E IT                                                    P
 T          F OUD   T     S U H H *   T F   P  NY    OU     NU    N AM                                                    R
 E          T MRS   N     K     R S             T    CR     R       GE                                                    S
                                                     KS                   DESCRIPTION

04/11/77 1   162    7.9  U C C A M Y N 0107           0.2    0.2 1        OPERATOR (MILITARY) REALIGNED HOSE ON      FFRD510.1
                                                                         ADAPTER AND TRANSMISSION FILLER
                                                                         (DIPSTICK) TUBE, THEN RETIGHTENED
                                                                         CLAMP.EPR FB-FFRD510.1

04/11/77    00162 008.0  U C C A M N M 1501  00.0  00.1  00.1       00.0 OPERATOR REMOVED R. H. LADDER ASSEMBLY     FFRD511A
                                                                         WHICH HAD BEEN DAMAGED BECAUSE OF
                                                                         IMPROPER OPERATING PROCEDURES BEING
                                                                         USED. CORRECTIVE ACTION (REPLACEMENT)
                                                                         DEFERRED EPR FB-FFRD511A

04/11/77      165   8.1  U O O A M Y Y 0114           0.6    0.8 2   0.3 ORG LEVEL MAINT (MILITARY) REPLACED        FFRD511.5
                                                                         FITTINF ON STEER CYL WHICH HAD A PIN
                                                                         HOLE EPR FB-FFRD511.5

PARTS 6801-12-NWO         GP=011411   NO=   LIFF=00165 ELBOW, LH STEER CYL

05/11/77    00172 009.0  U O O H M Y Y 2406  00.0  02.8  02.8 1    00.0 ORG LEVEL MAINTENANCE REPLACED ADAPTER      FFRD513
                                                                         (AND PREFORMED PACKING) BROKEN
                                                                         ACCIDENTALLY WHEN STRUCK BY TREE WHICH
                                                                         HAD BEEN KNOCKED DOWN AND WAS BEING
                                                                         PUSHED AWAY. - (NOTE THIS ACTION WAS
                                                                         NOT ADEQUATELY PERFORMED RESULTING IN
                                                                         LATER FAILURE SEE ACTION 90A) EPR
                                                                         FB-FFRD513

PARTS 2548092             GP=012406J01 NO=01 LIFF=00172 ADAPTER
      5330-00-064-7796       012406004    01       00172 PACKING/PREFORMED (WITH ABOVE AT HYDRAULIC MANIFOLD

05/11/77 1 00183 010.0  U C C A M Y N 0609  00.0  00.3  00.3 1    00.0 OPERATOR (MIL) STRAIGHTENED LIGHT GAURD    FFRD514
                                                                         AND HEADLIGHT ASSEMBLY DAMAGED WHEN
                                                                         TREE FELL ACROSS VEHICLE O.E.M. TOOLS
                                                                         WERE USED TO PERFORM TASK. DURING
                                                                         ACTION SOME WASHERS WERE LOST AND WILL
                                                                         HAVE TO BE REPLACED LATER - POST
                                                                         MISSION/250 HR MAINTENANCE EPR
                                                                         FB-FFRD514

05/11/77    00183 010.0A U O O H M N N 2406  00.0  00.8  00.9 2    00.0 ORG LEVEL MAINTENANCE (MIL + CIV FOR 5     FFRD515
                                                                         MINUTES) REPLACED PREFORMED PACKING,
                                                                         AND RETIGHTENED ADAPTER AND COUPLER,
                                                                         WHICH HAD BEEN WORKED ON APPROXIMATELY
                                                                         11 HOURS EARLIER, (SEE ACTION8.0) EPR
                                                                         FB-FFRD515

PARTS 5330-00-064-7796    GP=012406004 NO=01 LIF'=00011 PACKING, PREFORMED, HYDRAULIC MANIFOLD
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,945
D        S OHR   A     T S E E T Q A C   G   CD    CH
A        H DON   C     A / C C M A M S   R   OL    LO     MH     M OT
T        F OUD   T     S U H H ,   T F   P   NY    OU     AO     E IT
E        T MRS   N     K     R S             T     CR     NU     N AM
                                                   KS     R        GE                            E
                                                                                                 P
07/11/77   00199 011.0  U O O H C Y Y 0309  00.0  00.8  01.4          DESCRIPTION                R
                                                                                                 S

                                                              00.9 OPERATOR (MIL) SPENT 8 MINUTES
                                                                   ATTEMPTING TO FIND REASON ENGINE DIED    FFRD516
                                                                   AND COULD NOT BE RESTARTED. ORG
                                                                   MAINTENANCE (1 MIL + 1 CIV) THENSPENT
                                                                   24 MINUTES TROUBLE SHOOTING TO FIND
                                                                   THAT DRAIN VALVE ON FUEL FILTER WAS
                                                                   OPENED AND THAT FILTERS WERE CLOGGED.
                                                                   ORG. MAINTENANCE (1 MIL) THEN CHANGED
                                                                   FILTERS IN APPROXIMATELY 18.5 MINUTES
                                                                   (VEHICLE WAS ALSO REFUELED BUT THIS
                                                                   TIME WAS NOT CONSIDERED 4 MIN EST) EPR
                                                                   FB-FFRD516
PARTS 2910-00-287-1912      GF=010309901 NO=02 LIFE=00199 CARTRIDGE, FILTER, FUEL
07/11/77   00200 011.1  U C C A M Y N 1201  00.4  00.1  00.1 1  00.0 OPERATOR (MIL) DEACTIVATED POWER
                                                                   SECTION PARKING BRAKE. COUNTERACTIVE     FFRD518
                                                                   ACTION WAS REQUIRED BECAUSE CABLE HAD
                                                                   BECOME KINKED PREVENTING PARKING BRAKE
                                                                   FROM BEING FULLY RELEASED CONECTING
                                                                   ACTION\ REPLACEMENT OF CABLE DEFERRED.
                                                                   EPR FB-FFRD518
07/11/77   00201 012.0  U O O H M Y Y 1211  00.0  00.3  00.3 1  00.0 ORG. LEVEL MAINTENANCE (MIL) REPLACED
                                                                   EMERGENCY COUPLING (GLAD HAND) BROKEN    FFRD518.5
                                                                   DURING IMPROPER ATTEMPT TO REMOVE DOZER
                                                                   VEHICLE WHICH WAS STUCK IN MUD. EPR
                                                                   FB-FFRD518.5
PARTS 4730-00-232-5440      GP=011211E99 NO=01 LIFE=00201 COUPLING, EMERGENCY P.S. RADIATOR END
08/11/77   00221 013.0  U O O H M Y Y 1411  00.4  00.1  00.1 1  00.0 ORG LEVEL MAINTENANCE (MIL) REPLACED
                                                                   DEFECTIVE PREFORMED PACKING (O RING) ON  FFRD520
                                                                   FITTING AT ROTARY MANIFOLD EPR
                                                                   FB-FFRD520
PARTS 1300294
                            GP=011411099 NO=01 LIFE=00221 PACKING, PREFORMED (REF ASSOCIATED WITH FITTING: FIG 110
                                                            SHT 2, ITEM 39)
09/11/77     235 014.0  U O O I M Y Y 1208  00.4  00.0  00.4 1  00.0 REPLACEMENT OF HOSE ASSEMBLY WAS
                                                                   PERFORMED BY ORG LEVEL MAINTENANCE,      FFRD521
                                                                   (MIL, ). THIS TASK IS NOT SPECIFICALLY
                                                                   ADDRESSED BY THE MAC. SINCE COMPONENTS
                                                                   IN THE AIR BRAKE SYSTEM ARE
                                                                   REMOVED/REPLACED BY ORG, AND SINCE SUCH
                                                                   REMOVAL/ REPLACEMENT GENERALLY REQUIRES
                                                                   DISCONNECTING OF ONE OR MORE HOSES, IT
                                                                   WOULD SEEM LOGICAL THAT ORG IS CAPABLE
                                                                   AND WOULD BE THE LOGICAL CANDIDATE FOR
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,945
 D         S CHR    A    T S E E T Q A C    G  CO      CH     MH     M DT                                        E
 A         H DON    C    A / C C M A M S    R  OL      LO     AO     E IT                                        P
 T         F OUD    T    S U H H '   T F    P  NY      OU     NU     N AM                                        R
 E         T MRS    N    K     R S             T       CR      R      GE                                         S
                                                       KS                    DESCRIPTION

PARTS 243R10-JSN10-J45510 GP=011220885 NO=01 LIFF=00235 HOSE ASSEMBLY, AIR MANIFOLD (REF DEP5-XXX-201-20XP, FIG 103
                                                              ITEM 8)

09/11/77   00235 014.0A U C C A M Y N 1802  00.0  00.1  00.1 1  00.0 OPERATOR, (MIL) NOTED AND REPLACED        FFRD522
                                                                     MISSING HARDWARE ON WINDSHIELD ASSEMBLY
                                                                     ACTION WAS TAKEN WHILE VEHICLE WAS DOWN
                                                                     FOR HOSE REPLACEMENT (SEE ACTION
                                                                     15.0)HARDWARE LOSS WAS DUE TO
                                                                     IMPROPER/INADEQUATE TIGHTENING DURING
                                                                     ACTION7.0. EPR FB-FFRD522

PARTS 17C-616H             GP=011802A99 NO=04 LIFE=   235 SCREW, CAP, HEX HEAD, WINDSHIELD ASSY
      27E-06H                 011802A99    04         235 WASHER FLAT WINDSHIELD ASSEMBLY (REF DEP 5-XXX-201-204P;
                                                              FIG 128 ITEMS 1+2

09/11/77   00240 015.0  S O O A M Y N 0000  00.0  02.2  02.4 2  00.0 ORG. LEVEL MAINTENANCE PERFORMED
                                                                     QUARTERLY SCHEDULED MAINTENANCE, POWER
                                                                     SECTION, DOZER VEHICLE (250 HR)

PARTS 2940-00-580-6283     GP=010106902 NO=02 LIFE=00240 ELEMENT, ENGINE OIL FILTER, FULL FLOW
      5365-00-253-3357        010106902    02       00240 GASKET (USED WITH ABOVE ITEM)
      9311                    010106903    02       00240 ELEMENT, ENGINE OIL FILTER, BY PASS
      11639                   010106903    02       00240 GASKET, COVER (USED WITH ABOVE ITEM)
      2940-00-487-2789        010304901    01       00240 ELEMENT, AIR CLEANER
      2910-00-287-1912        010309901    02       00041 CARTRIDGE, FUEL FILTER
      5330-00-663-4773        010309901    02       00041 GASKET (USED WITH ABOVE ITEM)
      299080                  010508901    01       00240 ELEMENT, WATER FILTER (CORROSION RESIST)
      569022-03               010700901    01       00240 VENT ASSY, BREATHER, CONVERTER QUARTERLY SCHEDULED
                                                              MAINTENANCE
      LF-511                  010721901    01       00240 ELEMENT, TRANSMISSION OIL FILTER
      5330-00-132-0248        010721901    01       00240 PACKING, PREFORMED (USED WITH ABOVE)
      569022-03               010900901    01       00240 VENT ASSY, BREATHER, MIDMOUNT

09/11/77   00240 015.0A U O O A M Y N 1501  00.0  00.2  00.2 1  00.0 ORG LEVEL MAINTENANCE REPLACED L H       FFRD502A
                                                                     LADDER ASSEMBLY WHICH HAD BEEN REMOVED
                                                                     AT HMR 93.2 EPR FB-FFRD502A

09/11/77   00240 015.0B U O O A M Y N 1501  00.0  00.2  00.2 1  00.0 ORG LEVEL MAINTENANCE REPLACED R H       FFRD511A
                                                                     LADDER ASSEMBLY WHICH HAD BEEN DAMAGE
                                                                     AND REMOVED AT HMR 1622. ACTION TAKEN
                                                                     AT QUARTERLY (250 HR) SCHEDULED
                                                                     MAINTENANCE EPR FB-FFRD511A
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,945
 D          S OHR   A    T S E E T Q A C   G  CO     CH     MH    M DT                                          E
 A          H DON   C    A / C C M A M S   R  OL     LO     AO    E IT                                          P
 T          F OUD   T    S U H H '   T F   P  NY     OU     NU    N AM                                          R
 E          T MRS   N    K     R S            T      CR     R       GE                                          S
                                                     KS                     DESCRIPTION


 12/11/77   00281 016.0  U O O A M Y Y 1414  00.0   01.7   01.8 2  00.0 ORG LEVEL MAINTENANCE (,IL) REPLACED     FFRD524
                                                                        STEERING CONTROL VALVE DUE TO LEAK AT
                                                                        SEAL ON SHAFT. EPR FB-FFRD524
CRITICALITY FACTOR= 1.00

 PARTS HGB 40011         GP=011414910 NO=01 LIFE=00281 VALVE, STEERING CONTROL REF OEPS-XXXX-201-20YP, FIG 107,
                                                           ITEM 26

 14/11/77   00312 017.0  U C C A M N N 0306  00.0   00.1   00.1 1  00.0 DURING POST OP PMCS, OPERATOR (MIL,)     FFRD525
                                                                        REPLACED LOST HARDWARE AT A FUEL TANK
                                                                        MOUNTING BRACKET. EPR FB-FFRD525

 PARTS 17C-828           GP=010306999 NO=01 LIFE=00312 SCREW, CAP, HEX HEAD
       27E-08               010306999    01      00312 WASHER, FLAT
       590-08               010306999    01      00312 NUT, HEX

 22/11/77   00455 018.0  U O O A C Y Y 0106  00.0   00.8   00.0 1  00.4 ORG LEVEL MAINTENANCE, (CIV.,) REPLACED  FFRD527.5
                                                                        SENDER MOUNTING BRACKET FOUND TO BE
                                                                        LEAKING DURING PRE-OP PMCS. EPR
                                                                        FB-FFRD527.5

 PARTS 2547869           GP=010106999 NO=01 LIFE=00455 BRACKET, SENDER MTG. RH BANK OF ENGINE.

 07/12/77   00494 019.0  S O O A C Y N 0000  00.0   03.1   03.2 2  00.0 ORG. LEVEL MAINTENANCE PERFORMED
                                                                        QUARTERLY SCHEDULED MAINTENANCE\ POWER
                                                                        SECTION, DOZER VEHICLE (500 HR

 PARTS 2940-00-580-6283  GP=010106902 NO=02 LIFE=00254 ELEMENT, ENGINE OIL FILTER, FULL FLOW
       5365-00-253-3357     010106902    02      00254 GASKET (USED WITH ABOVE ITEM)
       9311                 010106903    02      00254 ELEMENT, ENGINE OIL FILTER, BY PASS
       11639                010106903    02      00254 GASKET, COVER (USED WITH ABOVE ITEM)
       2940-00-487-2789     010304901    01      00254 ELEMENT, AIR CLEANER
       2910-00-287-1912     010309901    02      00254 CARTRIDGE, FUEL FILTER
       5330-00-663-4773     010309901    02      00254 GASKET (USED WITH ABOVE ITEM)
       299080               010508901    01      00254 ELEMENT, WATER FILTER (CORROSION RESIST)
       569022-03            010700901    01      00254 VENT ASSY, BREATHER, CONVERTER
       LF-511               010721901    01      00254 ELEMENT, TRANSMISSION OIL FILTER
       5330-00-132-0248     010721901    01      00254 PACKING, PREFORMED (USED WITH ABOVE)
       569022-03            010900901    01      00254 VENT ASSY, BREATHER, MIDMOUNT
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,945
 D         S OHR   A    T S E E T Q A C   G  CD     CH     MH    M OT                                       E
 A         H DON   C    A / C C M A M S   R  OL     LO     AO    E IT                                       P
 T         F OUD   T    S U H H '   T F   P  NY     OU     NU    N AM                                       R
 E         T MRS   N    K     R S            T      CR     R       GE                                       S
                                                    KS                      DESCRIPTION

07/12/77   00494 019.0A U O O I C Y N 0607  00.0   03.0   03.0 1  00.0 ORG LEVEL MAINTENANCE REPAIRED WIRING   FFRD512.5A
                                                                     PANEL OF POWER SECTION. CORRECTIVE
                                                                     ACTION TAKEN AT END OF PQT-C. FAILURE
                                                                     OCCURRED AT HMR 166.8 EPR FB-FFRD512.5

PARTS 8508494             GP=010607--- NO=02 LIFE=00167 RELAY, LIGHT CONTROL, WIRING PANEL

07/12/77   00494 019.0B U O O A C Y N 1201  00.0   00.7   00.7 1  00.0 ORG LEVEL MAINTENANCE REPLACED PARKING  FFRD518A
                                                                     BRAKE CABLE ON DOZER POWER SECTION.
                                                                     CORRECTIVE ACTION TAKEN AT END OF
                                                                     PQT-C. INITIAL FAILURE WAS AT HMR 199.5
                                                                     EPR FB-FFRD518A

PARTS 2546146             GP=011201999 NO=01 LIFE=00200 CABLE, REMOTE ACTUATOR,(PARKING BRAKE)

00/01/78   00494 019.0C U O O I C Y N 2202  00.0   00.5   00.5 1  00.0 ORG LEVEL MAINTENANCE REPLACED LOCK     FFRD508A
                                                                     RING CONTROL CABLE ASSY WHICH HAD BEEN
                                                                     BROKEN AT HMR 114.9. CORRECTIVE ACTION
                                                                     TAKEN AT END OF PQT-C. EPR FB-FFRD508A

PARTS C81295-1            GP=012202099 NO=01 LIFE=00115 CONTROL CABLE ASSY, LOCK RING

20/01/78   00494 021.0D U O O A C Y N 2201  00.0   00.0   00.0 0  00.0 REPLACEMENT MIRROR ASSEMBLIES PROVIDED  FFRD505.5,509.5
                                                                     FOR THOSE DAMAGED DURING PQT-C
                                                                     TESTING.THESE ITEMS ARE NOT INSTALLED
                                                                     BUT ARE SHIPPED OFF EQUIPMENT. EPR
                                                                     FB-FFRD505.5,509.5

PARTS 67-480              GP=012201     NO=02 LIFE=00105 MIRROR MTG ARM ASSY (RH SIDE)
      67-480                 012201        02      00125 MIRROR MTG ARM ASSY (LH SIDE
      61-901                 012201        01      00105 MIRROR HEAD (RH SIDE)
      61-901                 012201        01      00125 MIRROR HEAD (LH SIDE)
      64-520                 012201        01      00105 SPOT MIRROR (LH SIDE)

22/03/78 2 512.5 022.0  U O O A M N N 2407  00.0   00.5   00.5 1  00.0 LOWER DOLLY WHEEL CYLINDER PRESSURE     898
                                                                     FROM 2500PS1 TO 2100 PSI. TC MEET
                                                                     AIRCRAFT LOADING REQUIREMENTS EPR
                                                                     FB-899

22/03/78 2 512.5 022.0A U F O A C Y Y 1414  00.0   00.1   00.1 1  00.0 RE-ADJUST STEERING PRESSURE FROM 2700   897
                                                                     PS1 TO 2500 PS1 EPR FB-897
CRITICALITY FACTOR= 1.00
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,945
 D         S OHR   A     T S E E T Q A C   G  CD    CH      MH     M OT                                              E
 A         H DON   C     A / C C M A M S   R  OL    LO      AO     E IT                                              P
 T         F OUD   T     S U H H *   T F   P  NY    OU      NU     N AM                                              R
 E         T HRS   N     K     R S             T    CR      R        GE                                              S
                                                    KS                      DESCRIPTION

 23/03/78 1 512.5 023.0  U O O A M N N 1208         02.7   02.7 1  00.0 REPLACED FEMALE COUPLINGS EPR FB-836          836

 PARTS DE5365-462-1          GP=000011208 NO=03 LIFE=-        COUPLING, FEMALE

 24/03/78 1 515.2 024.0  U C C A M N N 0000   00.0  00.2   00.2 1  00.0 ADDED 10 GAL HYDRAULIC FLUID TO
                                                                     RESERVOIR

 28/03/78   517.0 025.0  U O O A     Y Y 2406         1.4    2.8 2          REMOVED AND REPLACED "O" RING AT TANDEM  1014
                                                                     PUMP. EPR FB-1014
CRITICALITY FACTOR= 1.00

 PARTS 58K-219               GP=000012406 NO=01 LIFE=         PACKING, PREFORMED

 28/03/78 1 517.0 025.0A U O O A M N N 0305         2.0    2.0 1          REPLACED CONNECTION HOSE ON               1015
                                                                     TURBOCHARGER RETURN LINE. EPR FB-1015

 PARTS 556150                GP=000010305 NO=01 LIFE=         CONNECTION HOSE

 28/03/78   517.0 025.0B U O O A     N N 0401         0.1    0.1 1          TIGHTENED EXHAUST CLAMPS EPR FB-1016      1016

 28/03/78   517.0 025.0C U C C A     N N 0612         0.3    0.3 1          CLEANED AND SERVICED BATTERIES. EPR       1016
                                                                     FB-1016

 28/03/78   517.0 025.0D U O O A     Y Y 0710         0.2    0.2 1          TIGHTENED FITTING AT MODULATOR VALVE.     1016
                                                                     EPR FB-1016

 28/03/78   517.0 025.0E U O O A     Y Y 2406         0.5    0.5 1          RELOCATE HYD. LINES AND ELECTRICAL        1016
                                                                     CABLES EPR FB-1016

 28/03/78   517.0 025.0F U C C A     N N 2406         0.1    0.1 1          TIGHTENED HOSE FITTING AT LEFT DOLLY      1016
                                                                     WHEEL GLOBE VALVE. EPP FB-1016

 28/03/78   517.0 025.0G U C C A     N N 2406         0.1    0.1 1          TIGHTENED HOSE CLAMP AT OUTLET OF THE     1016
                                                                     HYD. TANK. EPR FB-1016

 28/03/78   517.0 025.0H U C C A     N N 2406         0.1    0.1 1          TIGHTENED HYDRAULIC HOSE FITTING. EPR     1016
                                                                     FB-1016

 28/03/78   517.0 025.0I U O O A     Y Y 0306         0.1    0.1 1          TIGHTENED FITTING FUEL LINE EPR FB-1016   1016
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,945
 D        S OHR   A     T S E E T Q A C   G  CD    CH    MH    M DT                                   E
 A        H DON   O     A / C C M A M S   R  OL    LO    AO    E IT                                   P
 T        F OUD   T     S U H H '   T F   P  NY    OU    NU    N AM                                   R
 E        T MRS   N     K     R S            T     CR    R       GE                                   S
                                                   KS               DESCRIPTION

 28/03/78   517.0 025.0J U O O A   Y Y 1209       0.1   0.1 1      TIGHTENED FITTING AT AIR COMPRESSOR EPR  1016
                                                                 FB-1016

 28/03/78   517.0 025.0K U O O A   Y N 0609       0.2   0.2 1      REPLACED BLACKOUT LIGHT HOUSING. EPR     1016
                                                                 FB-1016

 PARTS 11639520          GP=000010609 NO=01 LIFE=       BODY COMP. LIGHT.

 28/03/78   517.0 025.0L U C C A   Y N 0304       0.2   0.2 1      REPLACED AIR CLEANER ELEMENTS. EPR       1016
                                                                 FB-1016

 PARTS P11-7437          GP=000010304 NO=01 LIFE=       FILTER ELEMENT, AIR OUTER
       P11-9373             000010304   01              FILTER ELEMENT, AIR INNER

 28/03/78   517.0  25.0M U O O A   N N 0612       0.1   0.1 1      RE-ROUTED BATTERY CABLES. EPR FB-1016    1016
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,946
 D           S OHR   A     T S E E T Q A C   G  CD    CH    MH    M OT                                   E
 A           H DON   C     A / C C H A M S   R  OL    LO    AO    E IT                                   P
 T           F OUD   T     S U H H '   T F   P  NY    OU    NU    N AM                                   R
 E           T MRS   N     K     R S            T     CR    R       GE                                   S
                                                      KS                   DESCRIPTION

02/11/77   00078 001.0  U O D A M Y Y 7436  00.0  00.2  00.4 2  00.0 PRG MAINTENANCE (MIL) REPLACED L.H. ROD  FFRD509
                                                                     END ASSEMBLY OF THE ASJUSTABLE 75 TILT
                                                                     LINK ASSEMBLY. MAC DOES NOT
                                                                     SPECIFICALLY ADDRESS THIS TASK HOWEVER
                                                                     TILT CYLINDER IS REPLACED AT ORG AND
                                                                     THIS TASK IS SIMILAR (EASIER)
                                                                     REPLACEMENTOF ROD END IS IN TURN
                                                                     SIMPLER/SAFER/ QUICKER, THAN
                                                                     REPLACEMNET OF WHOLE ADJUSTABLE TILT
                                                                     LINK ASSEMBLY SMR CODE INDICATESTHAT
                                                                     ROD END IS STOCKED AT D.S. HOWEVER
                                                                     NEEDED ITEM COULD BE TAKEN FROM GOOD
                                                                     ASSY EPR FB-FFRD509
CRITICALITY FACTOR= 1.00

 PARTS 2545973           GP=027436901 NO=01 LIFE=00079 ROD END ASSY L.H. ADJ, TILT LINK, ASSY

05/11/77   00126 002.0  U F O I C N N 2001  00.0  00.3  00.6    00.0 DIRECT SUPPORT MAINTENANCE, (CIV,)        FFRD513.5
                                                                     REPLACED THE FORK SHIFTER OF THE DOZER
                                                                     MINCH ASSEMBLY AT HMR 2399 (DOZER
                                                                     SECTION LIFE 192)ITEM HAD BEEN BROKEN
                                                                     DUE IMPROPER/UNSAFE PROCEDURES AT HMR
                                                                     174.5 AND CORRECTIVE ACTION WAS
                                                                     DEFERRED) EPR FB-FFRD513.5

07/11/77   00152 003.0  U C C A M Y N 1201  00.0  00.1  00.1 1  00.0 OPERATOR (MIL) DEACTIVATED DOZER          FFRD517
                                                                     PARKING BRAKE USING O.E.M. TOOLS.
                                                                     COUNTERACTIVE MEASURE WAS NECCESITATED
                                                                     DUE TO DAMAGE CAUSED WHEN TREE FELL
                                                                     ACROSS PARKING BRAKE CONTROL LEVER -
                                                                     REPAIR/REPLACEMENT OF LEVER DEFERRED.
                                                                     EPR FB-FFRD517

08/11/77 0 0162. 005.0  U 0 0 I   N N 7436  00.0  00.7  00.9 2  00.0 ADJUSTABLE TILT LINK ASSEMBLY REPLACED
                                                                     BY ORG LEVEL MAINTENANCE,TILT LINK WAS
                                                                     BROKEN THROUGH VEHICLE ASSIDENT WHILE
                                                                     PULLING IT OUT OF SOFT SOIL. EAC DOES
                                                                     NOT SPECIFICALLY ADDRESS THIS ITEM TASK
                                                                     IS SIMILAR TO CYLINDER REPLACEMENT
                                                                     ALLICATED TO ORG. SMR CODE IN MANUALS
                                                                     SHOWS AVAILABILITY AT D.S. WHILE LSAR
                                                                     REPORT INDICATES AVAILABILITY AT ORG.

 PARTS 2545975           GP=027436901 NO=01 LIFE=00162 ADJUSTABLE TILT LINK ASSMBLY (NOTE L.H. ROD ASSEMBLY OF
                                                  THIS TILT LINK WAS REPLACED 84 HOURS EARLIER SEE ACTION
                                                  6YFFR D509. PART LIFE OF TOTAL ASSEMBLY IS 162 HOURS AS
                                                  SHOWN)
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,946
D          S OHR   A    T S E E T Q A C   G  CD    CH    MH    M DT
A          H DON   C    A / C C M A M S   R  OL    LO    AO    E IT                                              E
T          F OUD   T    S U H H *   T F   P  NY    OU    NU    N AM                                              P
E          T MRS   N    K     R S            T     CR    R       GE                                              R
                                                   KS                DESCRIPTION                                 S

09/11/77   00192 006.0  U C O I M Y Y 2001  00.0  00.9  00.9 0  0.0  OPERATOR TOOK COUNTERACTIVE MEASURES TO  FFRD523
                                                                     PERMIT OPERATION TO CONTINUE REMOVING
                                                                     APPROXIMATELY 30 FEET OF
                                                                     DEFECTIVE/DAMAGED CABLE AND REPLACING
                                                                     HOOK ON REMAINING GOOD CABLE O.E.M.
                                                                     TOOLS WERE USED. EPR FB-FFRD523

09/11/77   00192 006.0A S O O A M Y N 0000  00.0  00.6  00.8 2  00.0 ORG LEVEL MAINTENANCE PERFORMED
                                                                     QUARTERLY SCHEDULED MAINTENANCE ON
                                                                     DOZER SECTION(250HR)

PARTS 569022-03          GP=020900000 NO=01 LIFE=00192 VENT ASSY, BREATHER, MIDMOUNT
      569022-03             021000901    01      00192 VENT ASSY BREATHER, AXLE

16/11/77   00294 007.0  O O O A C Y Y 7436  00.0  00.3  00.3 1  00.0 ORG LEVEL MAINT. (CIV) REPLACED SKID      FFRD526
                                                                     SHOES AND ASSOCIATED PLOW BOLTS AND
                                                                     SELF-LOCKING NOTS. NOTE SKID SHOES WERE
                                                                     LOST BECAUSE PROPER INSPECTION AND /OR
                                                                     PREVENTATIVE MAINTENANCE PROCEDURES
                                                                     WERE NOT ADHERED TO MAC IS NOT CLEAR ON
                                                                     THIS TASK ALLOCATION EPR FB-FFRD526
CRITICALITY FACTOR= 1.00

PARTS 2546023            GP=027436A99 NO=02 LIFE=00294 SHOE SKID
      1552064               027436A99    16      00294 BOLT PLOW
      17D-5H                027436A99    19      00297 NUT, SELF LOCKING HEX (REFERENCE FIG 36, ITEMS 6,7,8)

22/11/77   00412 008.0  O O O A M N N 2001  00.0  00.7  00.7 1  00.0 ORG LEVEL MANTENANCE (MIL) REPLACED      FFRD528
                                                                     WINCH CABLE THAT HAD BEEN BROKEN
                                                                     BECAUSE OPERATOR FAILED TO USE PROPER
                                                                     PROCEDURES EPR FB-FFRD528

PARTS NONE GIVEN         GP=022001001 NO=01 LIFE=00412 CABLE, WINCH

07/12/77   00446   8.1  U F F A C Y Y 2001  00.0  00.5  00.5 1  00.0 DIRECT SUPPORT LEVEL PERSONNEL REPLACED  FFRD527A
                                                                     FORK SHIFTER ON WINCH ASSEMBLY.
                                                                     CORRECTIVE ACTION TAKEN AT END OF PQT-C
                                                                     FAILURE OCCURRED AT HMR 373, INITIAL
                                                                     FAILURE WAS AT LEAST CONTRIBUTED TO BY
                                                                     IMPROPER OPERATION. EPR FB-FFRD527A

PARTS 13860              GP=022001    NO=    LIFE=00133 FORKSHIFTER, WINCH ASSY
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,946
D         S OHR    A     T S E E T Q A C   G  CD     CH     MH     H DT                                              E
A         H DON    C     A / C C H A M S   R  OL     LO     AO     E IT                                              P
T         F OUD    T     S U H H *   T F   P  NY     OU     NU     N AM                                              R
E         T MRS    N     K     R S            T      CR     R        GE                                              S
                                                     KS                    DESCRIPTION

07/12/77    00446 009.0A S 0 0 A C Y N 0000  00.0  00.9  01.2 2  00.0 ORG. LEVEL MAINTENANCE PERFORMED
                                                                      QUARTERLY SCHEDULED MAINTENANCE ON WORK
                                                                      SECTION, DOZER VEHICLE (500 HR)

PARTS 569022-03           GP=020900000 NO=01 LIFE=00254 VENT ASSY, BREATHER, MIDMOUNT
      569022-03              021000901    01      00254 VENT ASSY, BREATHER, AXLE

07/12/77    00446 009.0B U 0 0 A C Y N 0609  00.0  00.2  00.2 1  00.0 ORG LEVEL MAINTENANCE REPLACED WIRE       FFRD503A
                                                                      MACK-PROTECTING DOZER LIGHJTS. INITIAL
                                                                      DAMAGE OCCURRED AT 47 HOURS INTO PQT-C
                                                                      TEST (HMR 947) AND CORRECTIVE ACTION
                                                                      TAKEN AT END OF TEST EPR FB-FFRD503A

PARTS 2546099             GP=020609202 NO=02 LIFE=00047 MASK, WIRE (LIGHT PROTECTION) RH + LH.

07/12/77 1 00446 0 9.0C U 0 0 I C Y N 0222  0000  00.2  00.2 1       ORG LEVEL MAINT (CIVILIAN) REPLACED      FFRD508.5
                                                                      REFLECTORS ON DOZER BLADE WHICH HAD
                                                                      BEEN BROKEN EARLY IN PQT-C TESTING.
                                                                      CORRECTIVE ACTION DEFERRED TO AND TAKEN
                                                                      AT END OF PQT-C. EPR FB-FFRD508.5A

PARTS MS 35387-2          GF=022202    NO=02 LIFE=00072 REFLECTOR, AMBER RH & LH ,DOZER BLADE

07/12/77    00446 009.0D U 0 0 A C Y N 0609  00.0  00.1  00.1    00.0 ORG LEVEL MAINTENANCE REPLACED LENSES    FFRD512
                                                                      ON COMPOSITE LIGHTS ON DOZER SECTION
                                                                      CORRECTIVE ACTION TAKEN AT END OF
                                                                      PQT-C, DAMAGE OCCURRED AT HMR 166.8 EPR
                                                                      FB-FFRD512

PARTS 6220-00-179-4325    GP=020609    NO=02 LIFE=00119 LENS, COMPOSITE LIGHT, (R H + L H)

07/12/77    00446 009.0E U 0 0 A C Y N 1201  00.0  00.4  00.4 1  00.0 ORG LEVEL MAINTENANCE STRAIGHTENED       FFRD517A
                                                                      PARKING BRAKE LEVER AND REPLACED
                                                                      ASSOCIATEDCONTROL CABLE CORRECTIVE
                                                                      ACTION TAKEN AT END OF PQT-C. FAILURE
                                                                      OCCURRED AT HMR199.3 EPR FB-FFRD517A

PARTS 172-M-GG-2-56 (02)  GF=021201    NO=01 LIFE=00151 CONTROLCABLE,PARKING BRAKE

07/12/77    00446 009.0F U 0 0 A C Y N 1801  00.0  00.5  00.5 1  00.0 ORG LEVEL MAINTENANCE STRIGHTEN L.H.
                                                                      FENDER DURING GENERAL CLEAN UP PRIOR TO
                                                                      PAINTING VEHICLE AT END OF PQT-C
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,946
D          S OHR   A    T S E E T Q A C   G  CO   CH    MH    M DT                                         E
A          H DON   C    A / C C M A M S   R  OL   LO    AO    E IT                                         P
T          F OUD   T    S U H H '   T F   P  NY   OU    NU    N AM                                         R
E          T MRS   N    K     R S            T    CR    R       GE                                         S
                                                  KS                     DESCRIPTION
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07/12/77   00446 009.0G U O O A C Y N 0609  00.0  00.1  00.1 1  00.0 ORG LEVEL PERSONNEL REPLACED/SECURED
                                                                     B.O. HEADLIGHT ON DOZER SECTION DURING
                                                                     GENERAL CLEAN UP, AT END OF PQT-C,
                                                                     PRIOR TO PAINTING VEHICLE.
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23/03/78 2 512.5 010.0  U O O A M Y Y 1208  00.0  00.1  00.2 2  00.0 REPLACED CRACKED AIR HOSE CONNECTOR EPR  900
                                                                     FB-900

PARTS 8M-6JMS           GP=000021208 NO=01 LIFE=513.1 CONNECTOR, AIR HOSE
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28/03/78   517.0 010.1  U C C A   N N 2406         0.2   0.2 1          TIGHTENED LOWER FITTING ON HYDRAULIC    975
                                                                     QUICK DISCONNECT MANIFOLD. EPR FB-975
                                                                     ITEM 1

28/03/78   517.0 010.2  U C C A   N N 2406         0.2   0.2 1          TIGHTENED UPPER FITTING ON HYDRAULIC    975
                                                                     QUICK DISCONNECT MANIFOLD. EPR FB-975
                                                                     ITEM 2
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,947
 D        S OHR   A     T S E E T Q A C   G  CO    CH    MH    M UT                                   E
 A        H DON   C     A / C C M A M S   R  OL    LO    AO.   E IT                                   P
 T        F OUD   T     S U H H *   T F   P  NY    OU    NU    N AM                                   R
 E        T MRS   N     K     R S            T     CR    R      GE                                    S
                                                   KS                     DESCRIPTION

04/11/77   00172 001.0A U C C A M Y Y 0609  00.0  00.1  00.1 1  00.0 OPERATOR, (MIL,) REPLACED SEALED BEAM    FFRS502
                                                                     UNIT IN SERVICE HEADLINGT WHILE VEHICLE
                                                                     WAS DOWN FOR PREFORMED PACKING
                                                                     REPLACEMENT (ACT 1.0) EPR FB-FFRS502

PARTS 4880               GP=010609903 NO=01 LIFF=00172 LAMP, SEALED BEAM, SERVICE HEADLIGHT

09/11/77   00231 002.0  U C C A M Y N 0609  00.0  00.1  00.1 1  00.0 DURING POST OP PMCS, OPERATOR, (MIL,)    FFRS507
                                                                     FOUND AND REPLACED A BURNED OUT SEALED
                                                                     BEAM UNIT IN THE POWER SECTION SERVICE
                                                                     HEADLIGHT EPR FB-FFRS507

PARTS 4880               GP=010609903 NO=01 LIFF=00231 LAMP, SEALED BEAM, SERVICE HEADLIGHT,

09/11/77   00237 003.0  U O O I M Y N 0607  00.0  00.1  00.1 1  00.0 ORG. LEVEL MAINTENANCE, (MIL,) REPLACED  FFRS508
                                                                     CONVERTER TEMPERATURE GAUGE
                                                                     ILLUMINATION LAMP DURING QUARTERLY
                                                                     SCHEDULED MAINTENANCE, HMR 239.8 EPR
                                                                     FB-FFRS508

PARTS G.E. 464           GP=010607000 NO=01 LIFF=00237 LAMP, GAUGE ILLUMINATION, (CONV. TEMP.)

09/11/77   00240 004.0  S O O A M Y N 0000  00.0  02.2  02.3 2  00.0 IRG. LEVEL MAINTENANCE PERFORMED
                                                                     QUARTERLY SCHEDULED MAINTENANCE\ POWER
                                                                     SECTION, SCRAPER VEHICLE (250 HR)

PARTS 2940-00-580-6283   GP=010106902 NO=02 LIFF=00240 ELEMENT, ENGINE OIL FILTER, FULL FLOW
      5365-00-253-3357      010106902    02      00240 GASKET (USED WITH ABOVE ITEM)
      9311                  010106903    02      00274 ELEMENT, ENGINE OIL FILTER, BY PASS
      11639                 010106903    02      00274 GASKET, COVER (USED WITH ABOVE ITEM)
      2940-00-487-2789      010304901    01      00240 ELEMENT, AIR CLEANER
      2910-00-287-1912      010309901    02      00240 CARTRIDGE, FUEL FILTER
      5330-00-663-4773      010309901    02      00240 GASKET (USED WITH ABOVE ITEM)
      299080                010508901    01      00240 ELEMENT, WATER FILTER (CORROSION RESIST)
      569022-03             010700000    01      00240 VENT ASSY, BREATHER, CONVERTER
      LF-511                010721901    01      00240 ELEMENT, TRANSMISSION OIL FILTER
      5330-00-132-0248      010721901    01      00240 PACKING, PREFORMED (USED WITH ABOVE)
      569022-03             010900901    01      00240 VENT ASSY, BREATHER, MIDMOUNT

12/11/77   00274 005.0A S O O A M Y N 0106  00.0  00.2  00.2 1  00.0 ORG LEVEL MAINTENANCE (MIL) REPLACED BY  FFRS511
                                                                     ENGINE OIL FILTER ELEMENTS WHICH HAD
                                                                     NOT BEEN AVAILABLE WHEN Q MAINTENANCE
                                                                     WAS PERFORMED AT HMR 239.6. VEHICLE WAS
                                                                     DOWN DUE TO PROBLEM WITH HYDROSTATIC
                                                                     DRIVE. EPR FB-FFRS511
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,947
 D          S OHR   A    T S E E T Q A C   G  CD    CH     MH     M DT                               E
 A          H DON   C    A / C C M A M S   R  OL    LO     AO     E IT                               P
 T          F OUD   T    S U H H '   T F   P  NY    OU     NU     N AM                               R
 E          T MRS   N    K     R S            T     CR      R       GE                               S
                                                    KS                     DESCRIPTION

PARTS 9311                GP=010106000 NO=02 LIFE=00274 ELEMENT BY PASS ENGINE OIL FILTER

14/11/77    00289 007.0   U O O A M Y Y 0613  00.0  00.1  00.1 1  00.0 ORG. LEVEL MAINTENANCE, (MIL,) REPLACED  FFRS514
                                                                       TERMINAL ON WIRING HARNESS. DAMAGE
                                                                       NOTED BY OPERATOR DURING POST OP PMCS,
                                                                       CORRECTIVE ACTION TAKEN AT THAT TIME.
                                                                       EPR FB-FFRS514

PARTS UNKNOWN             GP=010613901 NO=01 LIFE=00289 TERMINAL, RING, SOLDERLESS CONNECTOR (POINT OF CONTACT IS
                                                             ENGINE OIL PRESSURE SENDER )

15/11/77    00308 008.0   U O C A M N N 1208  00.0  00.1  00.1 1  00.0 ORG. LEVEL MAINTENANCE, (MIL,) REPLACED  FFRS515
                                                                       AUTOMATIC DRAIN VALVE BROKEN OFF OF AIR
                                                                       RESERVOIR AS A RESULT OF VEHICLE
                                                                       ACCIDENT EPR FB-FFRS515

PARTS 281923              GP=011208A99 NO=01 LIFE=00308 VALVE, DRAIN, AUTOMATIC
      19F-5                  011208000     01       00308 REDUCER, PIPE (USED WITH ABOVE) ITEMS LOCSYRF ON 'DRY' TANK
                                                             - 2ND RESERVOIR FROM COMPRESSOR.

19/11/77    00396 010.0   U O C A M Y Y 1208  00.0  00.1  00.1 1  00.0 ORG. LEVEL MAINTENANCE, (MIL,) REPLACED  FFRS523
                                                                       AUTOMATIC DRAIN VALVE, THIS IS SAME
                                                                       ITEM REPLACED IN ACTION 11 EPR
                                                                       FB-FFRS523

PARTS 281293              GP=011208A99 NO=01 LIFE=00088 VALVE, DRAIN, AUTOMATIC - (P.S. 'DRY'TANK)
      19F-5                  011208000     01       00088 REDUCER, PIPE (USED WITH ABOVE)

22/11/77    00448 011.0   U O O A C N N 0900  00.0  00.5  01.0 2  00.0 ORG. LEVEL MAINTENANCE, (CIV.,) REMOVED  FFRS529
                                                                       POWER SECTION MIDMOUNT SO THAT IT COULD
                                                                       BE USED AS A REPLACEMENT PART FOR THE
                                                                       GRADER VEHICLE POWER SECTION\ 445 X
                                                                       116. NO FAILURE OF SCRAPER VEHICLE
                                                                       INVOLVED. EPR FB-FFRS529

29/11/77    00496 012.0   U O C A M Y Y 1208  00.0  00.1  00.1 1  00.0 ORG. LEVEL MAINTENANCE, (MIL.,)         FFRS531.3
                                                                       REPLACED AUTOMATIC DRAIN VALVE WHICH
                                                                       WAS TORN FROM AIR RESERVOIR DURING
                                                                       OPERATION IN MUDDY WORK AREA. THIS ITEM
                                                                       REPLACED ON TWO PREVIOUS OCCASSIONS,
                                                                       SEE ACTIONS 11.0 AND 15.0 EPR
                                                                       FB-FFRS531.3

PARTS 281923              GP=011208A99 NO=01 LIFF=00100 VALVE, DRAIN, AUTOMATIC (P.S. 'DRY'TANK)
      19F-5                  011208A99     01       00100 REDUCER, PIPE (USED WITH ABOVE)
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,947
 D          S OHR  A    T S E E T Q A C   G  CD     CH     MH    M OT                                       E
 A          H DON  C    A / C C M A M S   R  OL     LO     AO    E IT                                       P
 T          F OUD  T    S U H H '   T F   P  NY     OU     NU    N AM                                       R
 E          T HRS  N    K     R S            T      CR     R       GE                                       S
                                                    KS                   DESCRIPTION

29/11/77    00503 013.0  U O C A M Y Y 1208  00.0  00.1  00.1 1  00.0 ORG. LEVEL MAINTENANCE, (MIL,) REPLACED  FFRS531.7
                                                                      DRAIN VALVE WHICH HAD BEEN TORN FROM
                                                                      AIR RESERVOIR DURING OPERATION IN MUDDY
                                                                      WORK AREA. THIS ITEM HAD BEEN REPLACED
                                                                      JUST 7 HOURS EARLIER FOR SAME REASON,
                                                                      AND ON TWO PREVIOUS OCCASSIONS FOR
                                                                      DIFFERENT REASONS. THIS ITEM WAS ALSO
                                                                      BENT, BUT NOT BROKEKN, JUST 4 HOURS
                                                                      LATTER. EPR FB-FFRS531.7

PARTS 281923              GP=011208A99 NO=01 LIFE=00007 VALVE, DRAIN, AUTOMATIC (RS. 'WET' TANK)
      19F-5                  011208A99    01      00007 REDUCER, PIPE (USED WITH ABOVE)

30/11/77    00507 014.0  U O O A C Y Y 0708  00.0  01.0  01.0 1  00.0 ORG. LEVEL MAINTENANCE, (CIV.,)          FFRS533
                                                                      REPLACED NEUTRAL TRANSMISSION CONTROL
                                                                      SOLENOID. EPR FB-FFRS533

PARTS 236402              GP=010708G02 NO=01 LIFE=00507 SOLENOID, TRANSMISSION CONTROL, NEUTRAL

09/12/77    00527 015.0  S O O A C Y N 0000  00.0  03.0  03.2 2  00.0 ORG. LEVEL MAINTENANCE PERFORMED
                                                                      QUARTERLY SCHEDULED MAINTENANCE\ POWER
                                                                      SECTION, SCRAPER VEHICLE (500 HR)

PARTS 2940-00-580-6283    GP=010106902 NO=02 LIFE=00287 ELEMENT, ENGINE OIL FILTER, FULL FLOW
      5365-00-253-3357       010106902    02      00287 GASKET (USED WITH ABOVE ITEM)
      9311                   010106903    02      00253 ELEMENT, ENGINE OIL FILTER, BY PASS
      11633                  010106903    02      00253 GASKET, COVER (USED WITH ABOVE ITEM)
      2940-00-487-2789       010304901    01      00287 ELEMENT, AIR CLEANER
      2910-00-287-1912       010309901    CA      RTRID GE, FUEL FILTER
      5330-00-663-4773       010309901    02      00287 GASKET (USED WITH ABOVE ITEM)
      299080                 010508901    01      00287 ELEMENT, WATER FILTER (CORROSION RESIST)
      569022-03              010700000    01      00287 VENT ASSY, BREATHER, CONVERTER QUARTERLY SCHEDULED
                                                            MAINTENANCE
      LF-511                 010721       01      00287 ELEMENT, TRANSMISSION OIL FILTER
      5330-00-132-0249       010721       01      00287 PACKING, PREFORMED (USED WITH ABOVE)
      569022-03              010900901    01      00287 VENT ASSY, BREATHER, MIDMOUNT

09/12/77    00528 016.0A U O O A C Y N 1201  00.0  00.2  00.2 1  00.0 ORG LEVEL MAINTENANCE ADJUSTED POWER     FFRS521A
                                                                      SECTION PARKING BRAKE EPR FB-FFRS521A
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,947
 D        S OHR   A     I S E E T Q A C   G  CO    CH     MH     M DT                                        E
 A        H DON   C     A / C C M A M S   R  OL    LO     AO     E IT                                        P
 T        F OUD   T     S U M M *   T F   P  NY    OU     NU     N AM                                        R
 E        T HRS   N     K     R S             T    CR      R       GE                                        S
                                                   KS                  DESCRIPTION

09/12/77   00528 016.0B U O O A M Y N 0306  00.0  02.0   02.1 2  00.0 ORG LEVEL MAINTENANCE REMCVED/REPLACED    FFRS531A
                                                                     FUEL TANK EPR FB-FFRS531A

09/12/77   00528 016.0C U F F A C Y N 1501  00.0  00.3   00.3 1  00.0 DIRECT SUPPORT LEVEL MAINTENANCE          FFRS513A
                                                                     REPLACED/WELDED FUEL TANK MOUNTING
                                                                     BRACKET EPR FB-FFRS513A

14/04/78   557.0  17.0  U C C A   Y N 0609         0.2    0.2 1        REPLACED RIGHT FRONT TURN SIGNAL BULB     1017
                                                                     EPR FB-1017

PARTS MS35478-1683        GP=000010609 NO=01 LIFE=       LAMP INCANDESCENT

14/04/78   557.0  17.0A U C C A   N N 0609         0.1    0.1 1        REMOVED PAINT OFF RIGHT FRONT BLACKOUT    1017
                                                                     LIGHT EPR FB-1017

14/04/78   557.0  17.0B U C C A   N N 0501         0.1    0.1 1        ADDED COOLANT TO SURGE TANK EPR FB-1017  1017

14/04/78   557.0  17.0H U O O A   Y N 1201         0.3    0.3 1        REMOUNTED RUBBER BOOT ON PARKING BRAKE    1017
                                                                     EPR FB-1017

14/04/78   557.0  17.0C S O O A   Y N 0508         0.2    0.2 1        REPLACED CORROSION INHIBITOR EPR          1017
                                                                     FB-1017

PARTS 299080              GP=000010508 NO=01 LIFE=00057 FILTER, CORROSION RESISTOR

14/04/78   557.0  17.0D U C C A   N N 0401         0.2    0.2 1        TIGHTENED EXHAUST CLAMP BOLTS EPR         1017
                                                                     FB-1017

14/04/78   557.0  17.0E U C C A   N N 0612         0.4    0.4 1        CLEANED + SERVICED BATTERIES AND          1017
                                                                     TIGHTENED CABLES AT BATTERY POSTS AND
                                                                     MASTER SWITCH. EPR FB-1017

14/04/78   557.0  17.0F U C C A   N N 0106         0.1    0.1 1        TIGHTENED OIL DRAIN PLUG EPR FB-1017      1017

14/07/78   557.0  17.0G U C C A   N N 0900         0.4    0.4 1        REMOUNTED AND TIGHTENED PROPSHAFT DUST    1017
                                                                     SHIELD EPR FB-1017

14/04/78   557.0  17.0I U C C A   N N 2406         0.1    0.1 1        TIGHTEN HYDRAULIC LINE CLAMP EPR          1017
                                                                     FB-1017
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,947
 D          S OHR    A     T S E E T Q A C    G  CO     CH     MH     M OT                                       E
 A          H DON    C     A / C C M A M S    R  OL     LO     AO     E IT                                       P
 T          F OUD    T     S U H H '   T F    P  NY     OU     NU     N AM                                       R
 E          T HRS    N     K     R S             T      CR      R       GE                                       S
                                                        KS                    DESCRIPTION

14/04/78   557.0  17.0J U O O A    Y Y 0501          0.2    0.2 1        REPOSITIONED SURGE TANK AND REPLACED      1017
                                                                       SURGE TANK BOLT. EPR FB-1017

PARTS 17C-620H              GP=000010501 NO=01 LIFE=        SCREW CAP
      27E-6N                   000010501    01              WASHER FLAT
      59D-6N                   000010501    01              NUT SLFLKG

14/04/78   557.0  17.0K U O O A    Y Y 0106          0.1    0.1 1        TIGHTENED HOSE FITTING AT OIL COOLER.     1017
                                                                       EPR FB-1017

14/04/78   557.0  17.0L U O O A M Y Y 1411           0.5    0.5 1   0.1 REPLACED HYDRAULIC LINE FROM CHECK       1019
                                                                       VALVE TO ACCUMULATOR. EPR F9-1019

PARTS 2548280               GP=    011411 NO=01 LIFE=        TUBE ASSY, METAL

14/04/78   557.0  17.0M U F F A C N N 1501           1.5    1.5 1        STRAIGHTENED AND WELDED DOLLY WHEEL       1020
                                                                       CYLINDER UPPER BRACKET AND REPLACED
                                                                       CYLINDER UPPER MOUNTING PIN. EPR
                                                                       FB-1020

PARTS 2503283               GP=    012407 NO=01 LIFE=  557 PIN, STRAIGHT

14/04/78   557.0  17.0N U O O A    N N 1208          0.2    0.2 1        INSTALL MANUAL AIR TANK DRAIN VALVE.      1021
                                                                       AUTOMATIC DRAIN VALVE WAS MISSING AT OT
                                                                       II INITIAL INSPECTION. EPR FB-1021

PARTS UNK                   GP=    011208 NO=01 LIFE=        VALVE, MANUAL, AIR TANK DRAIN
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03/05/79
MAINTENANCE TASK LOG     TEST ,FAMECE1 TEST ITEM ,948
D           S OHR   A     T S E E T Q A C   G  CC    CH     HH     H OT                                        E
A           H DON   C     A / C C M A M S   R  OL    LO     AO     E IT                                        P
T           F OUD   T     S U H H '   T F   P  NY    OU     NU     N AM                                        R
E           T MRS   N     K     R S            T     CP     R        GE                                        S
                                                     KS                    DESCRIPTION

04/11/77   00160 001.0  U O O A M Y Y 2406  00.0  00.1  00.1 1  00.0 ORG. LEVEL MAINTENANCE, (MIL) REPLACED   FFRS501
                                                                      PACKING TO CORRECT LEAKING FITTING EPR
                                                                      FB-FFRS501

PARTS 58K-219              GP=052406C99 NO=01 LIFE=00160 PACKING, PREFORMED, USED WITH FITTING (REFER TO DEP
                                                                5-XXXX-205-20 + P FIG. 31, SHT. 1, ITEM 47)

07/11/77   00192 002.0  U O O I M Y Y 0801  00.0  00.9  00.9 1  00.9 ORG. LEVEL MAINTENANCE, (MIL,)          FFRS503
                                                                      ATTEMPTED TO TROUBLESHOOT PROBLEM
                                                                      INVOLVING FAILURE OF SCRAPER DRIVE TO
                                                                      DISENGAGE WHEN POWER SECTION WAS
                                                                      SHIFTED OUT OF 1 RST GEAR. TROUBLE
                                                                      DISAPPEARED WITHOUT CORRECTIVE ACTION
                                                                      BEING TAKEN. NOTE ALL TIME EXPENDED WAS
                                                                      DIAGNOSTIC EPR FB-FFRS503

07/11/77   00208 003.0  U O O A M Y Y 2406  00.0  00.6  01.2 2  00.0 ORG. LEVEL MAINTENANCE, (1 MIL + 1      FFRS505
                                                                      CIV.,) REPLACED FITTING ON HOSE ASSY
                                                                      FOUND TO BE LEAKING. ACTION INTERRUPTED
                                                                      MISSION FOR 36 MINUTES EPR FB-FFRS505

09/11/77   00228 004.0  U O O A M Y Y 0900  00.0  00.2  00.2 1  00.0 ORG. LEVEL MAINTENANCE, (MIL,) REPLACED  FFRS509
                                                                      INTERSECTIONAL PROPSHAFT AFTER ITEM HAD
                                                                      FAILED AS A RESULT OF FAILURE TO
                                                                      LUBRICATE EPR FB-FFRS509

PARTS 25-23728-1           GP=050900B01 NO=01 LIFE=00228 INTERSECTIONAL PROPSHAFT ASSY
      25-23727-1              050900B01    01      00228 INTERSECTIONAL PROPSHAFT ASSY

09/11/77   00228 004.0A S O O A M Y N 0000  00.0  00.7  01.1 2  00.0 ORG. LEVEL MAINTENANCE PERFORMED
                                                                      QUARTERLY SCHEDULED MAINTENANCE ON WORK
                                                                      SECTION OF THE SCRAPER VEHICLE (250 HR)

PARTS 569022-03            GP=050801901 NO=01 LIFE=00228 VENT ASSY, BREATHER, REDUCTION BOX
      569022-03               051000901    01      00228 VENT ASSY, BREATHER, AXLE

12/11/77   00261 005.0  U O O I C Y Y 0801  00.0  00.6  00.6 1  00.0 ORG. LEVEL MAINTENANCE, (CIV.,) NOTE    FFRS510
                                                                      THAT MAC IS UNCLEAR ON PROPER LEVEL,
                                                                      REPLACED AIR ROTARY UNION WHICH HAD
                                                                      LOOSENED AND FELL OUT OF THE SCRAPER
                                                                      DRIVE REDUCTION BOX. INCIDENT
                                                                      INTERRUPTED MISSION FOR 37 MINUTES EPR
                                                                      FB-FFRS510
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,948
 D          S OHR   A     T S E E T Q A C   G  CD     CH     MH     M OT                                    E
 A          H DON   C     A / C C M A M S   R  OL     LC     AO     E IT                                    P
 T          F OUD   T     S U M M '   T F   P  NY     OU     NU     N AM                                    R
 E          T MRS   N     K     R S            T      CR     R       GE                                     S
                                                      KS                    DESCRIPTION

12/11/77    00262 006.0   U O O I M Y Y 0608  00.0   00.9   00.9 1  00.7 HYDROSTATIC DRIVE ELECTRICAL CONTROL      FFRS512
                                                                         RELAY BOX REPLACED BY ORG. LEVEL
                                                                         MAINTENANCE, (MIL.) MISSION WAS
                                                                         INTERRUPTED FOR 51 MINUTES, INCLUDING
                                                                         40 MINUTES OF DIAGNOSTIC TIME EPR
                                                                         FB-FFRS512

PARTS UNKNOWN             GP=050608000 NO=01 LIFE=00262 RELAY BOX, ELECTRICAL CONTROL, SCRAPER DRIVE. (LOCATED ON
                                                            TOP OF HYDROSTATIC DRIVE PUMP AND ACTUATOR ASSY.)

12/11/77    00272 007.0   U O O A M Y Y 2403  00.0   00.1   00.1 1  00.0 ORG. LEVEL MAINTENANCE, (MIL,) REPLACED  FFRS513
                                                                         BOWL CYLINDER CONTROL LEVER ON REMOTE
                                                                         CONTROL VALVE. MISSION WAS INTERRUPTED
                                                                         FOR 30 MINUTES, TOTAL ELAPSED TIME,
                                                                         WHILE CORRECTION WAS MADE. EPR
                                                                         FB-FFRS513

PARTS 2546665             GP=052403B99 NO=01 LIFE=00272 LEVER, CONTROL, BOWL (LOCATED ON SCRAPER REMOTE CONTROL
                                                            VALVE. REFER TO DEP 5-XXXX-205-20 + P, FIG. 30, ITEM 5)

15/11/77    00309 008.0   U O H A M Y Y 0900  00.0   00.6   00.6 1  00.0 ORG LEVEL MAINTENANCE, (MIL,) REPLACED
                                                                         SPIDER AND BEARING ASSY ON
                                                                         INTERSECTIONAL PROPSHAFT REPLACED 81
                                                                         HOURS EARLIER. THIS SPIDER/ BEARING
                                                                         ASSY HAD BEEN IMPROPERLY FABRICATED
                                                                         RESULTING IN LOSS OF LUBRICANT AND
                                                                         FAILURE. NOTE ACTION TAKEN WOULD
                                                                         PROBABLY BE CONSIDERED A REPAIR OF
                                                                         PROPSHAFT PROPERLY PERFORMED AT ORG.

PARTS 114-4143A           GP=050900801 NO=01 LIFE=00081 SPIDER + BEARING ASSY INTERSECTIONAL PROPSHAFT (SCRAPER
                                                            DRIVE)

15/11/77    00309 009.0   U O O I M Y Y 2401  00.0   01.1   01.1 1  00.0 ORG. LEVEL MAINTENANCE, (MIL,) REPLACED  FFR-S517
                                                                         TUBE BETWEEN HYDROSTATIC PUMP AND ITS
                                                                         ACTUATOR. NOTE THAT THIS TUBE IS AN
                                                                         INTEGRAL PART OF THIS ASSEMBLY. ITS
                                                                         REPLACEMENT COULD BE CONSIDERED TO BE A
                                                                         REPAIR OF THIS ITEM PROPERLY ALLOCATED
                                                                         TO GENERAL SUPPORT. EPR FB-FFR-S517
CRITICALITY FACTOR= 1.00

PARTS NOTKNOWN            GP=052401HA1 NO=01 LIFE=00309 TUBE ASSY. (PART OF 2549194 PUMP AND ACTUATOR ASSY, SCRAPER
                                                            DRIVE)
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,948
D          S OHP    A     T S E E T Q A C    G  CD     CH     MH     M OT                                              E
A          H DON    C     A / C C M A M S    R  OL     LO     AO     E IT                                              P
T          F OUD    T     S U H H '   T F    P  NY     OU     NU     N AM                                              R
E          T MRS    N     K     R S             T      CR     R       GE                                               S
                                                       KS                  DESCRIPTION

19/11/77   00329 010.0   U F O A C N N 0900  00.0  00.3  00.3 1  00.0 DIRECT SUPPORT MAINTENANCE, (CIV.,)          FFRS519
                                                                      REPLACED SLIP YOKE ASSEMBLY ON
                                                                      INTERSECTIONAL PROPSHAFT. NOTE THIS
                                                                      ACTION WAS NECESSARY BECAUSE THIS SLIP
                                                                      YOKE WAS DEFECTIVE WHEN INSTALLED. THIS
                                                                      ITEM WAS INADVERTANTLY PICKED UP
                                                                      INSTEAD OF A GOOD SLIP YOKE THAT WAS
                                                                      AVAILABLE (SEE ACTION 6.0 OR FFRS509)
                                                                      EPR FB-FFRS519

PARTS 42-23728-1         GP=050900802 NO=01 LIFE=00101 YOKE, SLIP, INTERSECTIONAL PROPSHAFT. (NOTE PART LIFE SHOWN
                                                              IS TIME ITEM WAS ON THIS SCRAPER ITEM HAD PREVIOUS USE
                                                              WHICH RESULTED IN ITS DAMAGE)

19/11/77   00406 011.0   U C C I C Y Y 2403  00.0  00.1  00.1 1  00.0 DURING MISSION, OPERATOR, (CIV.,)            FFRS525
                                                                      BROKE, THEN REMOVED AND REPLACED THE
                                                                      EJECTOR CYLINDER CONTROL LEVER ROD.
                                                                      ACTION REQUIRED ONLY 4 MINUTES OF
                                                                      ACTIVE MAINTENANCE TIME EPR FB-FFRS525

PARTS 2546665            GF=052403B99 NO=01 LIFF=00406 CONTROL ROD, EJECTOR CYLINDER (ITEM PART OF REMOTE CONTROL
                                                              VALVE ASSY.)

22/11/77   00423 012.0   U O O I C Y Y 0801  00.0  00.5  00.7 2  00.0 ORG. LEVEL MAINTENANCE, (CIV'S.,)           FFRS527
                                                                      REPLACED AIR ROTARY UNION ON SCRAPER
                                                                      DRIVE REDUCTION BOX, PART HAD LOOSENED,
                                                                      AND FELL OUT, REPEATING INCIDENT
                                                                      EXPERIENCED 162 HOURS EARLIER. REFER TO
                                                                      ACTION 7.0 OR FFR S510 EPR FB-FFRS527

22/11/77   00428 013.0   U O O I C Y Y 2401  00.0  00.2  00.2 1  00.0 ORG. LEVEL MAINTENANCE, (CIV.,)             FFRS528
                                                                      REPLACED PREFORMED PACKING ON DRAIN
                                                                      PLUG LOCATED IN HYDROSTATIC DRIVE-PUMP
                                                                      AND ACTUATOR ASSEMBLY. EPR FB-FFRS528

PARTS UNKNOWN            GP=052401HA1 NO=01 LIFE=00428 PACKING, PREFORMED (USED WITH DRAIN PLUG ON HYDROSTATIC
                                                              DRIVE PUMP AND ACTUATOR ASSY.)

28/11/77   00467 014.0   S O O A C Y Y 0900  00.0  00.5  00.5 1  00.0 ORG. LEVEL MAINTENANCE, (CIV.,)             FFRS526
                                                                      INSTALLED A MODIFIED, (LONGER) SLIP
                                                                      YOKE ON SCRAPER INTERSECTIONAL
                                                                      PROPSHAFT ASSEMBLY, NO FAIRLUE.
                                                                      INVOLVED WITH THIS MAINTENANCE ACTION.
                                                                      EPR FB-FFRS526

PARTS 42-23728-1         GP=050900802 NO=01 LIFE=00138 YOKE, SLIP, INTERSECTIONAL PROPSHAFT (NOTE PART LIFE SHOWN
                                                              INDICATES TIME THIS PART WAS USED. NO FAILURE INVOLVED)
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,948
 D          S OHR   A     T S E E T Q A C   G  CD     CH     MH     M DT                                    E
 A          H DON   C     A / C C M A M S   R  OL     LO     AO     E IT                                    P
 T          F OUD   T     S U H H '   T F   P  NY     OU     NU     N AM                                    R
 E          T MRS   N     K     R S            T      CR     R        GE                                    S
                                                      KS                      DESCRIPTION

28/11/77   00469 015.0  U O O I C Y Y 0801  00.0  00.6  00.6 1  00.0 ORG. LEVEL MAINTENANCE, (CIV.,)          FFRS530
                                                                     REPLACED/RETIGHTENED AIR ROTARY UNION
                                                                     WHICH HAD LOOSENED, AND FELL OUT. THIS
                                                                     IS RECORRENCE OF INCIDENTS REPORTED IN
                                                                     ACTIONS 7.0, AND 17.0, WITH ONLY 46
                                                                     HOURS SINCE LAST OCCURRENCE. EPR
                                                                     FB-FFRS530

30/11/77   00493 016.0  U O O I C Y Y 2401  00.0  01.4  01.9 2  00.8 ORG. LEVEL MAINTENANCE, (CIV.,)
                                                                     REPLACED HYDROSTATIC DRIVE HYDRAULIC
                                                                     MOTOR.

PARTS 89611                GP=052401401 NO=01 LIFE=00493 MOTOR ASSY. (SCRAPER HYDROSTATIC DRIVE)

09/12/77   00515 017.0A S O O A C Y N 0000  00.0  02.0  02.1 2  00.0 ORG LEVEL MAINTENANCE PERFORMED
                                                                     QUARTERLY SCHEDULED MAINTENANCE ON WORK
                                                                     SECTION OF SCRAPER VEHICLE (500 HR)

PARTS 569022-03            GP=050801901 NO=01 LIFE=00287 VENT ASS'Y, BREATHER, REDUCTION BOX
      569022-03               051000901    01      00287 VENT ASS'Y, BREATHER, AXLE
   HC 9500SUJ8H               052406R01    01      00022 ELEMENT, FILTER (LOW PRESSURE)
   HC 9500F-101               052406R01    01      00022 GASKET (USED WITH ABOVE ITEM
   HC 9600FUP8H               052406R02    01      00022 CARTRIDGE, FILTER, (HIGH PRESSURE)
   MS 28874-239               052406R02    01      00022 RING, BACK UP (USED WITH ABOVE)
   MS 28875-239               052406R02    01      00022 PACKING, PREFORMED (USED WITH ABOVE)

09/12/77   00516 018.0A U O O I C Y N 1201  00.0  00.2  00.2 1  00.0 ORG LEVEL MAINTENANCE PERSONNEL          FFRS521A
                                                                     ADJUSTED SCRAPER SECTION PARKING BRAKE
                                                                     EPR FB-FFRS521A

09/12/77   00516 018.0B U F F A C Y N 7448  00.0  00.2  00.2 1  00.0 DIRECT SUPPORT LEVEL MAINTENANCE         FFRS524A
                                                                     REPLACED/REWELDED HANDLES ON APRON LOCK
                                                                     PIN ASSY. EPR FB-FFRS524A

14/04/78   557.0  19.0  U C C A   N N 7448         0.2   0.2 1        TIGHTENED CUTTING EDGE BOLTS EPR        1022
                                                                     FB-1022

14/04/78   557.0  19.0A U C C A   Y N 2401         0.1   0.1 1        TIGHTENED HYDROSTATIC MOTOR DRAINPLUG.  1022
                                                                     EPR FB-1022
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,948
 D          S OHR   A     T S E F T Q A C   G  CD    CH     MH     M OT                                                 E
 A          H DON   C     A / C C M A M S   R  OL    LO     AO     E IT                                                 P
 T          F OUD   T     S U H H *   T F   P  NY    OU     NU     N AM                                                 R
 E          T MRS   N     K   R S              T     CR     R       GE                                                  S
                                                     KS                  DESCRIPTION

 14/09/78    557.0  19.0B U O O A   N N 1501        0.1    0.1 1      REPAIR REAR CLARK NAME PLATE EPR              1022
                                                                     FB-1022

 14/04/78    557.0  19.0C U C C A   N N 7448        0.2    0.2 1      REMOUNT SAFETY PIN IN EJECTOR STORAGE         1022
                                                                     BAR EPR FB-1022

 14/04/78    557.0  19.0D U C C A   N N 2406        0.2    0.2 1      TIGHTENED HYDRAULIC HOSE AT PUMP. EPR         1022
                                                                     FB-1022

 14/04/78    557.0  19.0E U C C A   N N 2407        0.2    0.2 1      TIGHTENED FITTING LEFT BOWL LIFT              1022
                                                                     CYLINDER. EPR FB-1022

 06/10/78 1 721.0   20.0  S C C A C N N                                COUPLED TO POWER SECTION T-.JO AT HMTR        1121
                                                                     READING 1036.6. EPR FB-1121

 11/10/78 1 735.4   21.0  S C C A C Y N 0000        0.4    0.8 2      PERFORMED 50 HOUR SERVICE. EPR FB-1122        1122

 17/10/78 1 756.4   22.0  U C C A C Y N 2407        0.2    0.2 1      REPLACE DEFECTIVE GREASE FITTING. EPR         1124
                                                                     FB-1124

 PARTS 10H-25              GP=   052407 NO=01 LIFE=        FITTING, GREASE

 25/10/78 1 767.4   23.0  U O O I C Y Y 2401        7.4   14.9 3   7.6 REPLACED HYDROSTATIC PUMP AND ACTUATOR.      1126
                                                                     EPR FB-1126

 PARTS 2549194             GP=   052401 NO=01 LIFE=        HYDROSTATIC PUMP AND ACTUATOR ASSY

 26/10/78 1 773.4   24.0  U O O A C Y N 7448        0.1    0.1 1      REPLACED LUBRICATION FITTING. EPR             1128
                                                                     FB-1128

 PARTS 12H-15              GP=   057448 NO=01 LIFE=        LUBRICATION FITTING

 27/10/78 1 778.4   25.0  U O O A C Y N 2401        0.5    0.5 1      REPLACED PREFORMED PACKING IN THE             1130
                                                                     HYDRAULIC LINE ON THE RIGHT SIDE OF THE
                                                                     HYDRASTATIC PUMP. EPR FB-1130

 PARTS 58K-219             GP=   052401 NO=02 LIFE=        PREFORMED PACKING

 28/10/78 1 785.1   26.0  U O O A C Y N 7448        0.2    0.2 1      USED A 10"X10" TIMBER TO STRAIGHTEN A         1131
                                                                     BEND IN THE APRON. EPR FB-1131
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,948
 D          S OHR   A    T S E E F T Q A C   G  CD    CH    MH    M DT                                  E
 A          H DON   C    A / C C C M A M S   R  OL    LO    AO    E IT                                  P
 T          F OUD   T    S U H H '   T F     P  NY    OU    NU    N AM                                  R
 E          T MRS   N    K     R S             T     CR    R       GE                                   S
                                                      KS                  DESCRIPTION

30/10/78 1 787.4  27.0  S C C A C Y N 0000          0.8   2.4 3      PERFORMED 50 HOUR SERVICE. EPR FB-1132      1132

31/10/78 1 793.3  28.0  U C C A C Y N 0524          0.1   0.1 1      TIGHTENED HOSE ASSY CONNECTOR ON            1133
                                                                   ROADSIDE OF SCRAPER AT APRON CYLINDER.
                                                                   EPR FB-1133

31/10/78 1 797.4  29.0  U C C A C Y N 2406   0000   0.1   0.1 1      TIGHTENED LINE TO APRON LIFT CYLINDER.      1134
                                                                   EPR FB-1134

03/11/78 1 804.6  30.0  S C C A C Y N 7448          1.0   2.0 2      REPLACED CUTTING EDGES. EPR FB-1136         1136

PARTS 2548786             GP=   057448 NO=01 LIFE=     CUTTING EDGE, INNER
      2544958                   057448     02          CUTTING EDGE, OUTER

04/11/78 1 810.4  31.0  U F F A C Y Y 1501          0.2   0.6 3      HEATED AND STRAIGHTENED UPPER EJECTOR       1138
                                                                   ASSY ROLLER TRACK. EPR FB-1138

06/11/78 1 811.6  32.0  U O O A C Y Y 1501          2.0   2.0 1      GROUND WELDS AND REWELDED REAR SUPPORT      1137(S-1)
                                                                   BRACKETS. EPR FB-1137(S-1)

06/11/78 1 811.6  33.0  U F F A C Y Y 2402          2.5   4.5 1  2.0 REPLACED.SOLENOID DETENT ASSY ON REMOTE     1140,_-1.
                                                                   CONTROL VALVE. EPR FB-1140,_-1.

PARTS E4259-17            GP=   052402 NO=01 LIFE=     SOLENOID DETENT ASSY

07/11/78 1 811.7  34.0  U O O A C Y N 0608          0.5   0.5 1      REPLACED COMPOSITE LIGHT. EPR               1139(S-1)
                                                                   FB-1139(S-1)

PARTS 11614157            GP=   050608 NO=01 LIFE=     LIGHT, COMPOSITE

08/11/78 1 817.5  35.0  U O O A C Y N 0608          0.5   0.5 1      REPLACED COMPOSITE LIGHT. EPR               1141(1139-1)
                                                                   FB-1141(1139-1)

PARTS 11614157            GP=   050608 NO=01 LIFE=     LIGHT, COMPOSITE

08/11/78 1 817.5  36.0  U O O A C Y N 1208          0.1   0.1 1      REPLACED GLADHAND. EPR FB-1142              1142

PARTS 7007-67             GP=   051208 NO=01 LIFE=     COUPLING, HOSE EMERGENCY (GLAD HAND)

08/11/78 1 818.6  37.0  U H H A C Y Y 2402          1.6   3.2 2  0.5 REPAIRED INSULATION ON COIL INSIDE          1143
                                                                   SOLENOID DETENT ASSY. EPR FB-1143
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U3/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,948
D          S OHR   A     T S E E T Q A C   G  CD     CH     MH     M DT                                          E
A          H DON   C     A / C C M A M S   R  OL     LO     AO     E IT                                          P
T          F OUD   T     S U H H '   T F   P  NY     OU     NU     N AH                                          R
E          T MRS   N     K     R S            T      CR     R        GE                                          S
                                                     KS                    DESCRIPTION

14/11/78 1 831.7  38.0  U O O A C Y N 2406          0.3    0.3 1    0.1 REPLACED FRONT ROADSIDE FITTING ON THE    1145
                                                                       HYDRASTATIC DRIVE PUMP. EPR FB-1145

PARTS 15K-8                 GP=   052406 NO=01 LIFE=        FITTING, HYDRAULIC JIC/MALE PIPE

16/11/78 1 838.4  39.0  S C C A C Y N 0000          0.2    0.2 1         50 HOUR SERVICE, NO FLUIDS OR           1148
                                                                       LUBRICANTS ADDED. EPR FB-1148

21/11/78 1 864.0  40.0  U O O I C Y Y               2.0    2.0 1    0.2 REPLACED ROTATING AIR UNICN. EPR          1152
                                                                       FB-1152

PARTS 2545660               GP=   05     NO=01 LIFE=        ROTARY UNION, AIR, AT REAR OF SCRAPER ON CLUTCH HOUSING

29/11/78 1 884.0  41.0  S C C A C Y N 0000          0.2    0.4 2         PERFORMED 50 HOUR SERVICE. EPR FB-1155  1155

29/11/78 1 884.0  42.0  S C C A C Y N 7448          1.0    3.0 3         REVERSED CUTTING EDGES. EPR FB-1156     1156

29/11/78 1 884.0  43.0  S O O A C Y N 1208          0.3    0.3 1         ADJUSTED SERVICE BRAKES. EPR FB-1159    1159

30/11/78 1 884.0  44.0  U O O I C N N 2408          0.5    0.5 1    0.1 REPLACED FAN ON ROADSIDE HYDRAULIC OIL    1157
                                                                       COOLER., EPR FB-1157

PARTS 2548377               GP=   052408 NO=01 LIFE=        FAN, HYDRAULIC OIL COOLER, REAR, ROADSIDE

11/12/78 1 911.0  45.0  U O O A C Y N 2403          0.3    0.3 1         RE-THREAD BROKEN EJECTOR CONTROL ROD.
                                                                       EP FB-1168

27/12/78 1 922.4  46.0  S O O A C Y N 0000          1.0    1.0 1         COMPLETED 250 HR MAINTENANCE EPR        1170
                                                                       FB-1170

PARTS 569022-03             GP=   050801 NO=02 LIFE=        VENT ASSY, BREATHER
      HC9600FUF8H                 052406    01              FILTER, CARTRIDGE
      HC9500SUJSH                 052406    01              FILTER, HYDRAULIC
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,949
 D        S OHR   A      T S E E T Q A C   G  CD     CH     MH     M OT                                   E
 A        H DON   C      A / C C M A M S   R  OL     LO     AO     E IT                                   P
 T        F OUD   T      S U H H *   T F   P  NY     OU     NU     N AM                                   R
 E        T HRS   N      K     R S            T      CR      R       GE                                   S
                                                     KS                      DESCRIPTION

18/11/77  00013 001.0A U O O A M N N 1414  00.0  02.3  03.1 2  00.0 ORG LEVEL MAINTENANCE,(1 MIL, 1CIV)   FFRG501
                                                                     REPLACED LEAKING STEER CONTROL VALVE
                                                                     EPR F3-FFRG501

PARTS HGB 40011          0 GP=011414    NO=01 LIFE=00013 STEER CONTROL VALVE

22/11/77  00056 002.0  U O O A C Y Y 0910  00.0  00.5  01.0 2  00.0 ORG LEVEL MAINTENANCE, (CIV) REPLACED  FFRG503
                                                                     POWER SECTION MIDMOUNT BEARING (NOTE
                                                                     REPLACEMENT ITEM TAKEN FROM SCRAPER
                                                                     VEHICLE-ITEM HAD 448.0 HOURS OF USE ON
                                                                     IT WHEN REMOVED FROM POWER SECTION
                                                                     446X111) EPR FB-FFRG503

PARTS 2547887            0 GP=010900    NO=01 LIFE=00056 BEARING,MIDMOUNT

23/11/77  00063 003.0  U O O I C Y Y 2406  00.0  00.7  00.7    00.1 ORG LEVEL MAINTENANCE (CIV) REPLACED A  FFRG504
                                                                     PERFORMED PACKING,(O RING,) AT HOSE
                                                                     CONECTION TO RELIEF VALVE EFR
                                                                     FB-FFRG504

PARTS 58K-219           01 GP=012406    NO=01 LIFE=00063 PACKING, PERFORMED (REF DEP 5-XXXX-201-20 AND P, FIG 140,
                                                             ITEM 32)

02/12/77  00164 004.0  U O O I M N N 2202  00.0  01.0  01.0 1  00.4 ORG LEVEL MAINT, MILITARY FOUND AND    FFRG509
                                                                     CORRECTED IMPROPER PLUMBING IN AIR
                                                                     LINES TO WIPER MOTORS-PIPING HAD BEEN
                                                                     IMPROPERLY ASSEMBLED WHEN SECTION WAS
                                                                     BUILT. EPR FB-FFRG509

02/12/77  00170 005.0  U O O A C Y Y 0900  00.0  00.3  00.3 1  00.0 ORG LEVEL MAINTENANCE, (CIV,)          FFRG510
                                                                     RETIGHTENED/TORQUED CAPSCREWS ON
                                                                     PROPSHAFT BETWEEN TRANSMISSION AND
                                                                     MIDMOUNT CONDITION HAD BEEN FOUND BY
                                                                     OPERATOR DURING POST-OP PMCS. EPR
                                                                     FB-FFRG510

02/12/77  00169 004.0A U C C A C Y N 0609  00.0  00.1  00.1 1  00.0 OBERATOR,(CIV) REPLACED 2 LAMPS IN     FFRG508
                                                                     COMPOSITE LIGHT ON POWER SECTION EPR
                                                                     FB-FFRG509

PARTS MS15570-623          GP=010609    NO=01 LIFE=  169 LAMP, INCANDESCENT
      MS35478-1683            010609       01        169 LAMP,INCANDESCENT
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03/05/79
MAINTENANCE TASK LOG     TEST ,FAMECE1 TEST ITEM ,949
 D          S OHR   A    T S F E T Q A C   G  CD    CH    MH    H DT                                          E
 A          H DON   O    A / C C H A M S   R  OL    LO    AO    E IT                                          P
 T          F OUD   T    S U H H '   T F   P  NY    OU    NU    N AM                                          R
 E          T MRS   N    K     R S            T     CR    R       GE                                          S
                                                    KS                   DESCRIPTION

 07/12/77   00247 005.1  S O O A C Y N 0000  00.0  04.0  04.3 2  00.0 ORG. LEVEL MAINTENANCE PERFORMED
                                                                       QUARTERLY SCHEDULED MAINTENANCE, POWER
                                                                       SECTION, GRADER VEHICLE (250 HOUR)

 PARTS 2940-00-580-6283     GP=010690201 NO=02 LIFE=00247 ELEMENT, ENGINE OIL FILTER, FULL FLOW
       5365-00-253-3357        010690201    02      00247 GASKET (USED WITH ABOVE ITEM)
       9311                    010690397    02      00247 ELEMENT, ENGINE OIL FILTER, BY PASS
       11633                   010690304    02      00247 GASKET, COVER (USED WITH ABOVE ITEM)
       2940-00-487-2789        010304901    01      00247 ELEMENT, AIR CLEANER
       2910-00-287-1912        010309901    02      00247 CARTRIDGE, FUEL FILTER
       5330-00-663-4773        010309901    02      00247 GASKET (USED WITH ABOVE ITEM)
       299080                  010508901    01      00247 ELEMENT, WATER FILTER (CORROSION RESIST)
       569022-03               010700000    01      00247 VENT ASSY, BREATHER, CONVERTER
       LF-511                  010721       01      00248 ELEMENT, TRANSMISSION OIL FILTER
       5330-00-132-0248        010721       01        247 PACKING, PERFORMED (USED WITH ABOVE)
       569022-03               010900       01        247 VENT ASSY, BREATHER, MIDMOUNT

 12/12/77   00322 006.0  U O O A M Y Y 1208  00.0  00.3  00.3 1  00.1 ORG. LEVEL MAINTENANCE REPLACED PIPE      FFRG515
                                                                       REDUCER ASSOCIATED WITH AUTOMATIC DRAIN
                                                                       VALVE. NOTE DIAGNOSTIC TIME SHOWN ABOVE
                                                                       WAS USED BY OPERATOR. OPERATION ALSO
                                                                       SPENT 5 MINUTES IN CHECKOUT. (TOTAL
                                                                       TIME AT ORG 0.1667, TOTAL TIME OPERATOR
                                                                       0.1500' AND TOTAL TASK TIME 0.3167 EPR
                                                                       FB-FFRG515

 PARTS 19F5                 GP=011208     NO=01 LIFE=00322 REDUCER, AUTO DRAIN VALVE

 14/12/77   00361 007.0  U O O 1 C Y N 1414  00.0  00.5  00.5 1  00.0 ORG. LEVEL MAINTENANCE REPLACED RELIEF    FFRG520
                                                                       VALVES IN ROTARY MANIFOLD. LEAKAGE WAS
                                                                       RESULT OF MISSING PARTS ASSOCIATED WITH
                                                                       RELIEF VALVES. PARTS HAD BEEN LEFT OUT
                                                                       DURING INITIAL ASSEMBLY OF THE ROTARY
                                                                       MANIFOLD EPR FB-FFRG520

 PARTS B1317977             GF=011414A01 NO=02 LIFE=00361 VALVE, RELIEF, ROTARY MANIFOLD

 21/12/77   00410 008.0  U O O A C Y N 0609  00.0  00.1  00.1 1  00.0 ORG LEVEL MAINTENANCE REPLACED LAMP IN    FFRG522
                                                                       COMPOSITE LIGHT, FOUND TO BE OUT DURING
                                                                       FINAL INSPECTION OF GRADER AT END OF
                                                                       PQT-C EPR FB-FFRG522

 PARTS 6240-00-044-6914     GP=010609907 NO=01 LIFE=00410 LAMP, INCANDESCENT, 24V
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,949
 D         S OHR   A      T S E E T Q A C   G  CD     CH     MH    M OT                                  E
 A         H DON   C      A / C C M A M S   R  OL     LO     AO    E IT                                  P
 T         F OUD   T      S U H H *   T F   P  NY     OU     NU    N AM                                  R
 E         T MRS   N      K     R S            T      CR     R       GE                                  S
                                                      KS                  DESCRIPTION

 21/12/77    00410 008.0A U O O A C Y N 0106  00.0  00.2  00.2 1  00.0 D G LEVEL MAINTENANCE REPLACED LEAKING   FFRG523
                                                                      PRESSURE SENDER (ENGINE OIL) LEAKAGE
                                                                      NOTED DURING FINAL INSPECTION OF GRADER
                                                                      AT END OF PQT-C TESTING EPR FB-FFRG52

 PARTS 6680-00-166-2202     GP=010106--- NO=01 LIFF=00410 SENDER, ENGINE OIL PRESSURE

 09/02/78 2 434.0 008.1   U C C A M N N 1802  00.0  01.8  03.6 2  00.0 MOUNTED THE WINDSHIELD ASSEMBLY, CAB     721
                                                                      AND CANVAS, AND THE ROPS. EFR FB-721

 16/02/78 1 434.8 009.0   U F F A C Y Y 0102  00.0  09.0  12.7 2  00.3 REPLACED FRONT CRANKSHAFT SEAL EPR       770
                                                                      FB-770
CRITICALITY FACTOR= 1.00

 PARTS 551515-N             GP=000010102 NO=01 LIFF=          SEAL, CRANKSHAFT

 22/02/78 1 434.9 010.0   U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 1/2 GAL. OF HYDRAULIC OIL.

 23/02/78 1 448.6 010.1   S C C A M Y N 0000  00.0  00.4  00.6 2  00.0 PERFORMED 50 HOUR MAINTENANCE EPR        1107
                                                                      FB-1107

 24/02/78 1 454.3 011.0   U C C A M Y N 2202  00.0  00.1  00.1 1  00.0 REMOVED ROADSIDE MIRROR HEAD AND LOWER   794
                                                                      MOUNTING ARM EPR FB-794

 24/02/78 1 454.3 011.0A U C C A M Y N 1414  00.0  00.1  00.3 1  00.2 TIGHTENED PIPE PLUG IN ROTARY MANIFOLD   795
                                                                      EPR FB-795

 25/02/78 2 468.2 012.0   U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GALLON ENGINE OIL

 25/02/78 2 468.2 012.0A U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 2 QUARTS HYDRAULIC OIL

 28/02/78 2 487.0 013.0   U O O A M Y Y 1501  00.0  00.8  01.6 2  00.2 ADJUSTED HYDRAULIC PRESSURE TO LOCKING   820
                                                                      RING. EPR FB-820 (.25 C.H. X2 MEN TO
                                                                      UNCOUPLE, .25 C.H. X 2 MEN TO RECOUPLE
                                                                      AFTER ADJUSTMENT NOT INCLUDED IN TOTAL)
CRITICALITY FACTOR= 1.00

 01/03/78 1 489.6 014.0   U C C A M Y N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GALLON OIL TO ENGINE

 01/03/78 1 489.6 014.0A U C C A M Y N 0000  00.0  00.2  00.2 1  00.1 ADDED 4 GALLONS OF HYDRAULIC FLUID TO
                                                                      RESERVOIR.
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,949
D          S OHR   A     T S E E T Q A C   G  CD    CH     MH    M DT                                     E
A          H DON   C     A / C C M A M S   R  OL    LO     AO    E IT                                     P
T          F OUD   T     S U H H '   T F   P  NY    OU     NU    N AM                                     R
E          T HRS   N     K     R S            T     CR     R       GE                                     S
                                                    KS                      DESCRIPTION
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04/03/78 1 508.4  15.0  S O O A M Y N 0000  00.0  10.5  13.6 2  00.0 PERFORMED 500 HOUR MAINTENANCE EPR    840
                                                                     FB-840

PARTS MS-35802-3        GP=000010106 NO=02 LIFE=        FILTER ELEMENT, OIL, FULL FLOW
      9311                 000010106    02              FILTER ELEMENT, OIL, BYPASS
      5678                 000010309    02              CARTRIDGE, FUEL FILTER
      LF-511               000010721    01              FILTER ELEMENT, OIL, TRANSMISSION
      299080               000010508    01              FILTER ELEMENT, WATER, CORROSION RESIST
      AC43887              000011202    01              FILTER ELEMENT, FL, POWER CLUSTER
      569022-03            000010900    01              VENT ASSY, BREATHER, MDMT
      569022-03            000011100    01              VENT ASSY, BREATHER, AXLE
      569020-03            000010700    01              VENT ASSY, BREATHER, TRANSMISSION

06/03/78 1 509.5  16.0  U C C A M Y N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GALLON TO HYDRAULIC RESERVOIR

06/03/78 1 509.5  16.0A U C C A M Y N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GALLON OF OIL TO ENGINE

06/03/78 1 509.5  16.0B U O O A M Y Y 0710  00.0  00.5  01.0 2  00.5 REPLACED SOLENOID ON ELECTRIC CONTROL  843
                                                                     VALVE 1ST GEAR. EPR FB-843

PARTS 236402            GP=   010710 NO=01 LIFE= 19.5 SOLENOID, ELECTRIC CONTROL VALVE

13/03/78 2 540.1  17.0  U O O A M N N 2407  00.0  00.5  01.0 2  00.0 REDUCE PRESSURE TO DOLLY WHEEL         857
                                                                     CYLINDERS AT RELIEF VALVE FROM 2700 PSI
                                                                     TO 2100 PSI EPR FB-857

30/03/78   546.0  18.0  U F O I   Y Y 1802         0.1   0.1 1       REPLACED BROKEN MOLDBOARD CONTROL BOX  1024
                                                                     FASTNER RECEPTACLE. EPR FB-1024

PARTS 119-18A           GP=000011801 NO=   LIFE=        RECEPTICLE, TURN LOCK FASTNER

30/03/78   546.0  18.0A U C C A   Y N 2406         0.1   0.1 1       TIGHTENED DOLLY WHEEL GLOBE VALVE      1025
                                                                     PACKING RETAINING NUT. EPR FB-1025

30/03/78   546.0  18.0B U C C A   Y N 1802         0.2   0.2 1       REPLACED BOLT RIGHT SIDE ENGINE PANEL  1025
                                                                     EPR FB-1025

PARTS 17C-16H           GP=000011802 NO=01 LIFE=        SCREW CAP HEX HEAD

30/03/78   546.0  18.0C U O O A   Y N 1211         0.2   0.2 1       STRAIGHTEN EMERGENCY DUMMY COUPLING EPR 1025
                                                                     FB-1025
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,949
 D        S OHR   A     T S E E T Q A C    G  CD     CH     MH    M OT                                   E
 A        H DON   C     A / C C M A M S    R  OL     LO     AO    E IT                                   P
 T        F OUD   T     S U H H '   T F    P  NY     OU     NU    N AM                                   R
 E        T MRS   N     K     R S              T     CR      R      GE                                   S
                                                     KS                    DESCRIPTION

30/03/78   546.0  18.00 U O O A   N N 0401        0.2    0.2 1       TIGHTEN EXHAUST CLAMPS EPR FB-1025      1025

30/03/78   546.0  18.0E U C C A   N N 0612        0.1    0.1 1       TIGHTENED BATTERY CABLE AT MASTER       1025
                                                                  SWITCH. EPR FB-1025

30/03/78   546.0  18.0F U C C A   N N 0304        0.2    0.2 1       CLEANED AND SERVICED AIR CLEANER EPR    1025
                                                                  FB-1025

30/03/78   546.0  18.0G U O O A   N N 0106        0.1    0.1 1       TIGHTENED ENGINE OIL PAN PLUG EPR       1025
                                                                  FB-1025

30/03/78   546.0  18.0H U O O A   Y Y 0613        0.2    0.2 1       TIGHTENED TRANSMISSION SENDING UNIT EPR 1025
                                                                  FB-1025

30/03/78   546.0  18.0I U C C A   N N 0108        0.1    0.1 1       TIGHTENED BOLT ON HEAT SHIELD. EPR      1025
                                                                  FB-1025

30/03/78   546.0  18.0J U C C A   N N 2406        0.1    0.1 1       RE-INSTALLED DUMMY HYDRAULIC MANIFOLD   1025
                                                                  COVER. EPR FB-1025

30/03/78   546.0  18.0K U C C A   N N 0612        0.2    0.2 1       CLEANED AND SERVICED BATTERIES (ITEM    1025
                                                                  #8). EPR FB-1025

30/03/78   546.0  18.0L U C C A   N N 0612        0.1    0.1 1       RE-MOUNTED BATTERY CABLES (ITEM #6).    1025
                                                                  EPR FB-1025
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,950
D         S OHR    #    T S E E T Q A C   G  CD     CH    MH     M DT                                   E
A         H DON    C    A / C C H A M S   R  OL     LO    AO     E IT                                   P
T         F OUD    T    S U H H *   T F   P  NY     OU    NU     N AM                                   R
E         T MRS    N    K     R S            T      CR     R       GE                                   S
                                                    KS                    DESCRIPTION

21/11/77   00057 001.0A U F F I C Y Y 7435  00.0  02.1  02.5 2  00.0 DIRECT SUPPORT LEVEL MAINTENANCE,     FFRG502
                                                                      REPLACED TWO (2) TILT LINK BRACKETS ON
                                                                      TILTLINK ASSEMBLY. (PARTS WERE
                                                                      CANABALIZED FROM V.P. GRADER) EPR
                                                                      FB-FFRG502
CRITICALITY FACTOR= 1.00

 PARTS 5268497           GP=047435M16 NO=01 LIFE=00057 TILT LINK ASSY - MOLD BOARD

 28/11/77   00108 002.0  U O O A C Y Y 0801  00.0  01.4  01.4 1  00.1 ORG LEVEL MAINTENANCE, (CIV) REMOVED   FFRG505
                                                                      REPLACED GRADER SECTION TRANSFER CASE
                                                                      EPR F3-FFRG505
CRITICALITY FACTOR= 1.00

 28/11/77   00108 002.0A U F F A C Y N 0801  00.0  01.2  02.1 2  00.0 DIRECT SUPPORT PERSONNEL, (2          FFRG505
                                                                      CIVILIANS,) REPAIRED TRANSFER CASE
                                                                      REMOVED IN ACTION 5.0) EPR FB-FFRG505
CRITICALITY FACTOR= 1.00

 PARTS 3110-00-155-6355  GP=040801902 NO=91 LIFE=00108 BEARING ASSY, BALL, TRANSFER CASE
       415425                040801902    91      00108 SEAL, OIL, TRANSFER CASE INPUT SHAFT

 06/12/77   00247 003.0  U O O A C Y Y 2407  00.0  01.5   2.9 2  00.0 ORG LEVEL MAINTENANCE, (I CIVILIANS,)  FFRG512
                                                                      REPLACED CYLINDER EPR FB-FFRG512
CRITICALITY FACTOR= 1.00

 PARTS 2545082           GP=042407911 NO=01 LIFE=00247 CYLINDER ASSY, BLADE LIFT, R.H.

 08/12/77   00248 004.0  U O O A C Y Y 7440  00.0  00.8  01.0 2  00.0 ORG LEVEL MAINTENANCE (CIV           FFRG513
                                                                      REMOVED/REPLACED SCARIFIER CYLINDER.
                                                                      NOTE CYLINDERWAS REMOVED AT TIME OF
                                                                      FAILURE OF SCARIFIER SHAFT, AND WAS
                                                                      REPLACED AT THE ENDOF POT-C AFTER
                                                                      SCARIFIER SHAFT WAS REPAIRED TIME SHOWN
                                                                      IS TOTAL TIME EX- PENDED AT ORG. LEVEL.
                                                                      EPR FB-FFRG513

 07/12/77   00260 005.0  S O O A C Y N 7435  00.0  00.9  01.3 2  00.0 WHILE GRADER VEHICLE WAS IN FOR 250    FFRG512.5
                                                                      HOUR, QUARTERLY SCHEDULED MAINTENANCE,
                                                                      ORG PERSONNEL, (CIV) REPLACED WORN MOLD
                                                                      BOARD CUTTING EDGES. EPR FB-FFRG512.5

 PARTS MS 35465-3        GP=047435A99 NO=01 LIFE=00260 CUTTING EDGE, L.H.
       MS 35465-2            047435A99    01      00260 CUTTING EDGE, R.H.
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,9:0
 O        S OHR  A      T S E E T Q A C  G  CO    CH    MH    M DT                                                E
 A        H OON  C      A / C C M A M S  R  OL    LO    AO    E IT                                                P
 T        F OUD  T      S U H H '   T F  P  NY    OU    NU    N AM                                                R
 E        T MRS  N      K     R S           T     CR    R      GE                                                 S
                                                  KS                  DESCRIPTION

07/12/77  00259 005.1  S O O A C Y N 0000  00.0  01.6  01.9 2  00.0 ORG. LEVEL MAINTENANCE PERFORMED
                                                                    QUARTERLY SCHEDULED MAINTENANCE ON WORK
                                                                    SECTION OF GRADER VEHICLE (250 HR)

PARTS 569022-03          GP=040801902 NO=01 LIFE=00260 VENT ASSEMBLY, BREATHER, TRANSFER CASE
      106656                041002E07      53    00260 VENT ASSEMBLY, BREATHER, AXLE

09/12/77  00290 006.0  U F F A C Y Y 2407  00.0  00.4  00.4 1  00.0 DIRECT SUPPORT MAINTENANCE                    FFRG514
                                                                    REPAIREDBLADE LIFT CYL BY WELDING ROD
                                                                    END TO ROD. EPR FB-FFRG514
CRITICALITY FACTOR= 1.00

09/12/77  00290 006.0A O O O A C Y N 2407  00.0  00.2  00.2 1  00.0 ORG. LEVEL MAINTENANCE RECONNECTED ROD      FFRG514
                                                                    END OF BLADE LIFT CYLINDER AFTER THAT
                                                                    CYLINDER HAD BEEN REPAIRED BY D.S.
                                                                    PERSONNEL EPR FB-FFRG514

12/12/77  00338 007.0  U F F A C Y Y 7438  00.0  00.3  00.3 1  00.0 DIRECT SUPPORT LEVEL MAINTENANCE              FFRG516
                                                                    REPLACED/REWELDED BALL ON CIRCLE AND
                                                                    DRAWBAR ASSEMBLY EPR FB-FFRG516
CRITICALITY FACTOR= 1.00

PARTS 5262833            GP=017438     NO=01 LIFE=  338 BALL, CIRCLE REVERSE MECHANISM

12/12/77  00338 007.0A U O O A C Y N 2407  00.0  00.2  00.2 1  00.0 ORG. LEVEL MAINTENANCE RECONNECTED ROD      FFRG516
                                                                    END OF CIRCLE SIDE SHIFT CYLINDER TO
                                                                    BALL ON CIRCLE AND DRAWBAR ASSY. AFTER
                                                                    THAT BALL HAD BEEN REPLACED BY D. S.
                                                                    EPR FB-FFRG516

12/12/77  00341 008.0  U O C A C Y N 7435  00.0  00.0  00.0 1  00.0 RRG LEVEL MAINTENANCE REPLACED LUBE          FFRG517
                                                                    FITTING AT ROD END OF BLADE LIFT
                                                                    CYLINDER EPR FB-FFRG517

PARTS 10H-25             GP=047435999 NO=01 LIFE=00341 FITTING LUBRICATION

12/17/77  00356 009.0  U F F A C N N 2407  00.0  00.3  00.3 1  00.0 DIRECT SUPPORT LEVEL MAINTENANCE              FFRG518
                                                                    REWELDED CRACK IN WELD AT JUCTION OF
                                                                    BLADE LIFT CYL ROD AND CYL CAP.(R.H.
                                                                    CYLINDER INVOLVED) EPR FB-FFRG518
CRITICALITY FACTOR= 1.00
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,950
 D          S OHR   A     T S E E T Q A C   G  CD    CH     MH    M OT                                      E
 A          H DON   C     A / C C H A M S   R  OL    LO     AO    E IT                                      P
 T          F OUD   T     S U H H *   T F   P  NY    OU     NU    N AM                                      R
 E          T HRS   N     K     R S            T     CR     R       GE        DESCRIPTION                   S
                                                     KS

12/12/77    00356 009.0A U O O A C N N 2407  00.0  00.2  00.2 1  00.0 ORG LEVEL MAINTENANCE RECONNECTED ROD   FFRG518
                                                                    END OF BLADE LIFT CYLINDER AFTER THAT
                                                                    CYL(R.H.) HAD BEEN REPAIRED BY DIRECT
                                                                    SUPPORT EPR FB-FFRG518

12/12/77    00371 010.0  U O C A C Y N 7435  00.0  00.0  00.0 1  00.0 ORG LEVEL MAINTENANCE REPLACED LUBE     FFRG518.5
                                                                    FITTING ON MOLDBOARD ASSEMBY (SIDE
                                                                    SHEET SLIDE) EPR FB-FFRG518.5

PARTS 10H-25              GP=047435999 NO=01 LIFF=00371 FITTING LUBRICATION, MOLDBOARD

20/12/77    00423 011.0  U O O A C Y N 7435  00.0  00.3  00.3 1  00.0 ORG LEVEL PREPARED, AND CHECKOUT        FFRG521
                                                                    MOLDBOARD ASSY IN ASSOCIATION WITH D.S.
                                                                    REPAIRS OF THAT ASSY - SEE ACTION 19.0A
                                                                    EPR FB-FFRG521

20/12/77    00423 011.0A U F F 1 C Y Y 7435  00.0  06.2  06.2 1  00.0 DIRECT SUPPORT MAINTENANCE REPAIRED     FFR6521
                                                                    MOLDBOARD WELDMENT BY REWELDING CRACKS
                                                                    FOUND DURING FINAL INSPECTION OF GRADER
                                                                    AT THE END OF PQT-C. EPR FB-FFR6521

22/02/78 1 434.9 012.0   S O O A M Y N 7435  00.0   0.5  01.0 2  00.0 REPLACED CUTTING EDGES ON GRADER WORK    767
                                                                    SECTION. PART LIFE NOT KNOWN SINCE
                                                                    GRADER WAS RECIEVED FROM CLARK
                                                                    EQUIPMENT CO WITH THE CUTTING EDGES
                                                                    ALREADY WORN DOWN. EFR FB-767

PARTS MS35465-2           GP=   047435 NO=01 LIFE=       BIT-BOTTOM-RH
      MS35465-3                 047435    01             BIT-BOTTOM-LH

23/02/78 1 448.6 012.1   S C C A M Y N 0000  00.0  00.2  00.2 1  00.0 PERFORMED 50 HOUR MAINTENANCE EPR       1107
                                                                    FB-1107

24/02/78 2 454.3 013.0   U O O A M N N 1203  00.0  00.0  01.5 2  01.0 CHECKED SERVICE BRAKE EPR FB-769        769

25/02/78 1 463.1 014.0   U O O A M Y Y 2406  00.0  00.3  00.3 1  00.0 REPLACED TOP ELBOW ON HYDRAULIC         813
                                                                    MANIFOLD EPR FB-813

PARTS 17K-11              GP=000042406 NO=01 LIFF=       ELBOW
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,950
 D         S OHR   A    T S E E T Q A C   G  CO
 A         H DON   C    A / C C M A M S   R  OL    CH      MH     M OT
 T         F OUD   T    S U H H •   T F   P  NY    LO      AO     E IT                                  E
 E         T HRS   N    K     R S            T     OU      NU     N AM                                  P
                                                   CR       R       GE                                  R
                                                   KS                       DESCRIPTION                 S

28/02/78 2 486.6 015.0  S C C A M Y N 7435  00.0  00.5  01.0 2  00.0 REPLACED LEFT AND RIGHT HAND BOTTOM
                                                                     BITS EPR FB-819                    819
PARTS                  GP=000047435 NO=01 LIFE=051.7 LEFT HAND BIT
                          000047435    01      051.7 RIGHT HAND BIT

03/03/78 1 506.4  16.0  S       C N N 0408  00.0  00.2  00.2 1  00.0 INSTALLED RETROFIT KIT TO MANUALLY
                                                                     DISCONNECT MIDMOUNT BEARING. 2 WASHERS,  842
                                                                     1-PIECE TUBING, 1-NUT. EPR FB-842

04/03/78 1 508.4  17.0  S O O A M Y N 0000  00.0  03.6  04.5 2  00.0 PERFORMED 500 HOUR MAINTENANCE EPR
                                                                     FB-840                             840
PARTS 569022-03        GP=000041000 NO=01 LIFE=       VENT ASSY, BREATHER, AXLE
      569022-03           000040801    01             VENT ASSY, BREATHER, TRANSFER CASE
      AC43887             000041204    01             FILTER ELEMENT, FL, POWER CLUSTER

04/03/78 2 509.0  18.0  U F F A C Y Y 0412  00.0  01.2  01.2 1  00.0 REMOVE SERVICE BRAKE FROM GRADER WORK
                                                                     SECTION BECAUSE THE BRAKE WAS SMOKING    852
CRITICALITY FACTOR= 1.00                                             AND WOULD NOT RELEASE EPR FB-852

06/03/78 1 509.5  19.0  S C C A M Y N 0474  00.0  01.2  01.2 1  00.1 REPLACED BOTTOM BITS ON MCLD BOARD EPR   845
                                                                     FB-845
PARTS MS35465-3        GP=   047435 NO=01 LIFE= 74.6 LH BOTTOM BIT
      MS35465-2              047435    01       74.6 RH BOTTOM BIT, MOLDBOARD, ASSY.

06/03/78 1 509.5  19.0A U O O A M Y N 0474  00.0  00.2  00.2 1  00.0 REPLACED CAP SCREW TILT LINK ASSY,
                                                                     CURBSIDE EPR FB-844                844
PARTS 17C-1080H        GP=   042407 NO=01 LIFE= UNK  CAPSCREW, HEX HEAD 5/8-11, 5 IN LG. TILT LINK ASSY,
                                                        CURBSIDE

08/03/78 2 539.3  20.0  U O O A M Y Y 0408  0112  05.0  10.4 2  00.8 REPAIRED TRANSFER CASE ASSEMBLY EPR
CRITICALITY FACTOR= 1.00                                             FB-849(S-1)                        849(S-1)

PARTS 2547066          GP=000040801 NO=01 LIFE= UNK  SHAFT, ASSY. DISS
      2547152             000040801    01      -     SPRING
      5100-362            000040801    01      -     SNAP RING
      2547146             000040801    01      -     WASHER THRUST
      509236              000040801    01      -     OIL SEAL
      25K-40616           000040801    01      -     PACKING PREFORMED
      415425              000040801    01      -     SEAL, OIL
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,950
 D         S OHR    A     T S E E T Q A C    G  CD      CH     MH     M DT                                      E
 A         H OON    C     A / C C H A M S    R  OL      LO     AQ     E IT                                      P
 T         F CUD    T     S U H H '   T F    P  NY      OU     NU     N AM                                      R
 E         T HRS    N     K     R S             T       CR     R        GE                                      S
                                                        KS                       DESCRIPTION

     3-L-20                       000040801    01        -     BEARING, BALL, ANLR
     3-L-19                       000040801    01        -     BEARING, BALL, ANLR

27/03/78 1 544.6  21.0  U F F A C Y Y 0474              0.6    0.6 1        REWELDED TWO WELDS CONTAINING CRACKS ON  911
                                                                           CIRCLE WELDMENT. EPR FB-911
CRITICALITY FACTOR= 1.00

28/03/78 1 546.0  22.0  U F F A C Y N 0801              5.0    5.0 1        REMOVE, REPAIR, AND REINSTALL MIDMOUNT   1026
                                                                           ASSEMBLY ON TRANSFER CASE. EPR FB-1026

PARTS 509263                GF=000040801 NO=01 LIFE=       OIL SEAL
      415425                   000040801    01         431 OIL SEAL

28/03/78   546.0  22.0A U F F A C Y N 1202              2.0    2.0 1        INSTALLED DISK BRAKE ASSEMBLY. EPR       852(S-1)
                                                                           FB-852(S-1)

PARTS 99-06750              GF=000041202 NO=01 LIFE=   000 BRAKE PAD
      99-06751                 000041202    01         000 BRAKE PAD
      5285942                  000041202    01         000 BRACKET
      5287052                  000041202    01         000 BRAKE CALIPER

28/03/78   546.0  22.0B U C C A   Y N 7435              0.2    0.2 1        REPLACE BOLT ON CUTTING EDGE EPR         1027
                                                                           FB-1027

PARTS 2548609               GF=000047435 NO=01 LIFE=       BOLT
      630-10H                  000047435    01             NUT PLAIN HEX

28/03/78   546.0  22.0C U C C A   Y N 2406              0.1    0.1 1        INSTALLED SCREW ON LOCK PLATE ON         1027
                                                                           HYDRAULIC MANIFOLD COVER. EPR FB-1027

PARTS DE5365-584-1          GF=000042406 NO=01 LIFE=       SCREW
      DE5365-585-1             000042406    01             LOCKWASHER
      DE5365-586-1             000042406    01             LOCKNUT

30/03/78   546.0  22.0D U O O A   Y N 2402              0.3    0.3 1        REPLACED LEVER BOOT ON CONTROL VALVE.    1027
                                                                           EPR FB-1027

PARTS M26X7                 GF=000042402 NO=01 LIFE=       BOOT LEVER

30/03/78   546.0  22.0E U O O A   Y N 2402              0.3    0.3 1        REPLACED LEVER BOOT ON CONTROL VALVE     1027
                                                                           EPR FB-1027

PARTS M26X6                 GF=000042402 NO=01 LIFE=       BOOT LEVER
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,950
 D         S OHR    A     T S E E T Q A C   G  CD    CH    MH    M DT                                              E
 A         H OON    C     A / C C M A M S   R  OL    LO    AO    E IT                                              P
 T         F OUD    T     S U H H '   T F   P  NY    OU    NU    N AM                                              R
 E         T MRS    N     K     R S            T     CR     R     GE                                               S
                                                     KS                 DESCRIPTION

30/03/78   546.0  22.0F U C C A   N N 2406          0.2   0.2 1    TIGHTENED PILOT LINE FITTING EPR              1027
                                                                  FB-1027

30/03/78   546.0  22.0G U O O A   Y Y 2407          0.7   1.4 2    REPLACED MOLDBOARD TILT CYLINDER BELL         1028
                                                                  CRANKS. BUSHINGS EXCESSIVELY WORN. EPR
                                                                  FB-1028

PARTS 2545717              GP=000042407 NO=01 LIFE=        BELL CRANK
      2545718                 000042407    01              BELL CRANK
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,951
 D         S OHR    A     T S E E T Q A C    G  CO     CH     MH     M OT                                     E
 A         H DON    C     A / C C M A M S    R  OL     LO     AO     E IT                                     P
 T         F OUD    T     S U H H *   T F    P  NY     OU     NU     N AM                                     R
 E         T HRS    N     K       R S           T      CR      R      GE                                      S
                                                       KS                  DESCRIPTION
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09/11/77 2 108.9 001.0   0 0 0 A M N N 0000  00.0  00.7  02.1 3  00.0 INSTALL ROPS

09/11/77 2 108.0 001.0A U 0 0 A M N N 0000  00.0  02.0  02.0 1  00.0 INSTALL (2) REAR VIEW SIDE MIRRORS

09/11/77 2 108.9 001.0B U 0 0 A M N N 0000  00.0  00.6  01.2 2  00.0 INSTALL WINDSHIELD ASSY

09/11/77 2 108.9 001.0C U 0 0 A M N N 0000  00.0  00.8  01.6 2  00.0 ASSEMBLE + INSTALL CAB RACK FRAME

09/11/12 2 108.9 001.0D U 0 0 A M N N 0000  00.0  00.4  01.6 4  00.0 INSTALL CANVAS DAB COVER

09/11/77 2 108.9 001.0E U 0 0 A M N N 0601  00.0  00.2  00.4 2  00.0 TIGHTEN LOOSE ALTERNATOR BELTS

15/11/77 1 113.3 002.0   U 0 0 A M Y Y 2406  00.0  00.3  00.3 1  00.1 REPLACED CONNECTOR ON HOSE ASSY-900         686
                                                                     ELBOW, FLARE CRACKED EPR FB-686

PARTS 56.50,242R4-JSN4-J9 GP=000012406 NO=01 LIFE=       HOSE ASSY NM-FITTING J90SL4 LOCATED AT TWO WAY VALVE

15/11/77 1 113.3 002.0A U C C A M Y N 0000  00.0  00.2  00.2 1  00.1 ADDED 2 GALLONS OE-10 TO HYDRAULIC         686
                                                                     RESERVOIR EPR FB-686

15/11/77 2 118.3 003.0   S C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 1.5 GALLONS OF OIL TO HYDRAULIC
                                                                     TANK

16/11/77 1 126.8 004.0   U 0 0 A M Y Y 2406  00.0  00.3  00.3 1  00.1 REPLACED CONNECTOR ON HOSE ASSY-900         687(686-1)
                                                                     ELBOW, FLARE CRACKED EPR FB-687(686-1)

PARTS 56.50,242R4-JSN4-J9 GP=000012406 NO=01 LIFE=013.1 HOSE ASSY NM-FITTING-J90SL4 LOCATED AT TWO WAY VALVE

16/11/77 2 128.2 005.0   U 0 0 A M Y Y 2406  00.0  00.3  00.3 1  00.0 TIGHTENED LOOSE HYD HOSE END FITTING      688
                                                                     EPR FB-688

16/11/77 2 128.2 005.0A U C C A M Y N 0000  00.0  00.3  00.3 1  00.0 ADDED 7 QUARTS OF HYDRAULIC FLUID LOST    688
                                                                     BY LOOSE FITTING EPR FB-688

16/11/77 2 120.0 006.0   U 0 0 A M Y Y 2406  00.0  00.3  00.3 1  00.0 RETIGHTENED LOOSE HYD HOSE ASSY END        689(688-1)
                                                                     FITTING EPR FB-689(688-1)

17/11/77 1 130.7 007.0   U 0 0 A M Y Y 2406  00.0  00.1  00.1 1  00.1 TIGHTENED FITTING ON HOSE CONNECTION,      690(688-2)
                                                                     2-WAY VALVE EPR FB-690(688-2)
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,951
 D        S OHR   A     T S F E T Q A C    G  CD     CH    MH     M DT                                                  E
 A        H OON   C     A / C C H A M S    R  OL     LO    AO     E IT                                                  P
 T        F OUD   T     S U H H '   T F    P  NY     OU    NU     N AM                                                  R
 E        T HRS   N     K     R S             T      CR    R       GE                                                   S
                                                     KS                    DESCRIPTION

03/12/77 1 139.0 008.0  S C C A C N N 0000  00.0  00.1  00.1 1  00.0 ADDED 4 QUARTS ENGINE OIL

06/12/77 1 151.3 009.0  U O O A M Y Y 0710  00.0  01.5  01.8 1  00.3 REPLACE DEFECTIVE NEUTRAL SOLENOID EPR   692
                                                                     FB-692
CRITICALITY FACTOR= 1.00

PARTS 236402             GP=000010710 NO=01 LIFE=152.3 SOLENOID

07/12/77 2 162.3 010.0  S C C A C Y N 0000  00.0  00.3  00.6 2  00.0 PERFORMED 50 HOUR MAINTENANCE EPR        693
                                                                     FB-693

10/12/77 1 168.0 011.0  U O O A C Y Y 1201  00.0  00.2  00.2 1  00.1 APPLIED HOT AIR TO PARKING BRAKE         581
                                                                     ACTUATOR VALVE TO THAW ICE WHICH WAS
                                                                     PREVENTING PARKING BRAKE FROM
                                                                     RELEASING. EPR FB-581

15/12/77 1 199.8 012.0  S C C A M Y N 0000  00.0  00.4  00.8 2  00.0 PERFORMED 50 HOUR MAINTENANCE EPR        450
                                                                     FB-450

17/12/77 1 203.9 013.0  U C C A C Y N 0612  00.0  00.2  00.2 1  00.1 BATTERY CABLES ARCING. HOOD HAS CUT      548
                                                                     THROUGH CABLE INSULATION. MOVED BATTERY
                                                                     CABLES SO THEY WOULD LINE UP WITH CUT
                                                                     OUT IN HOOD. EPR FB-548

06/01/78 1 248.9 014.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 3 GAL. OF HYDRAULIC FLUID.

09/01/78 1 255.9 014.1  S O O A M Y N 0000         4.9   6.9 1       PERFORMED 250 HR. MAINTENANCE PER LUBE  973
                                                                     ORDER L05-3840-201-12 EPR FB-973

PARTS MS-35802-3         GP=000010106 NO=02 LIFE=         FILTER ELEMENT, OIL, FULL FLOW
      9311                  000010106    02               FILTER ELEMENT, OIL, BYPASS
      5678                  000010309    02               CARTRIDGE, FUEL FILTER
      LF-511                000010721    01               FILTER ELEMENT, OIL, TRANSMISSION
      299080                000010508    01               FILTER ELEMENT, WATER, CORROSION RESIST
      AC43887               000011202    01               FILTER ELEMENT, FL, POWER CLUSTER
      569022-03             000010900    01               VENT ASSY, BREATHER, MDMT
      569022-03             000011100    01               VENT ASSY, BREATHER, AXLE
      569020-03             000010700    01               VENT ASSY, BREATHER, TRANSMISSION

18/02/78 1 288.2 015.0  U C C A M Y N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GALLON TRANSMISSION OIL
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,951
 D        S OHR   A     T S E E T Q A C   G  CD      CH      MH     M DT                                  E
 A        H DON   C     A / C C M A M S   R  OL      LO      AO     E IT                                  P
 T        F OUD   T     S U H H '   T F   P  NY      OU      NU     N AM                                  R
 E        T HRS   N     K     R S            T       CR      R        GE                                  S
                                                     KS                       DESCRIPTION

 21/02/78 2 305.4 016.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 2 GALLONS ENGINE OIL

 22/02/78 1 310.8 017.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 2 GALS. OF ENGINE OIL.

 23/02/78 2 329.5 018.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 2 QUARTS HYDRAULIC OIL

 23/02/76 2 329.5 018.0A U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GALLON TRANSMISSION OIL

 23/02/78 2 329.5 018.0B U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GALLON ENGINE OIL

 24/02/78 2 336.2 019.0  U O O A M Y Y 2406  00.0  00.3  00.3 1  00.0 REPLACED CRACKED HOSE FITTING EPR       790(686-2)
                                                                      FB-790(E86-2)

 PARTS J90SL4               GP=000012406 NO=01 LIFE=204.8 CONNECTOR,HOSE

 25/02/78 1 347.3 020.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GALLON ENGINE OIL

 25/02/78 1 347.3 020.0A U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 2 QUARTS TRANSMISSICN OIL

 25/02/78 2 354.4 021.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 2 QUARTS ENGINE OIL

 27/02/78 2 355.2 022.0  S C C A M Y N 0000  00.0  00.5  01.0 2  00.0 PERFORMED 50 HOUR MAINTENANCE EPR       806
                                                                      FB-806

 28/02/78 1 372.8 023.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 2 GALLONS HYDRAULIC OIL

 28/02/78 2 380.2 024.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GALLON HYDRAULIC OIL

 07/03/78 1 396.6 025.0  U F F A C Y Y 1501  00.0  00.3  00.3 1  00.1 REWELDED LOWER FRONT FUEL TANK BRACKET,  853
                                                                      EPR FB-853
CRITICALITY FACTOR= 1.00

 08/03/78 1 402.6  25.1  S C C A M Y N 0000         0.9   1.8 2       50 HOUR SERVICE. EPR FB-1109          1109

 10/03/78 1 405.0 026.0  U O O A M N N 0000  00.0  00.7  01.4 2  00.0 REMOVED ROPS, CANVAS, CAB FRAME AND     864
                                                                      WINDSHIELD EPR FB-864

 17/04/78   412.0 027.0  U C C A   N N 0607         0.1   0.1 1       REPLACED BULB IN DASH LIGHT. EPR FB-998 988
                                                                      ITEM 1

 PARTS 456                  GP=000010607 NO=01 LIFE=      LAMP, INCAND.
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,951
 D          S OHR   A    T S E E T Q A C   G  CD    CH     MH    M DT                                              E
 A          H DON   C    A / C C M A M S   R  OL    LO     AO    E IT                                              P
 T          F OUD   T    S U H H '   T F   P  NY    OU     NU    N AM                                              R
 E          T MRS   N    K     R S             T    CR     R       GE                                              S
                                                    KS                    DESCRIPTION

 17/04/78    412.0 027.0A U C C A    Y N 0609       0.1    0.1 1          REPLACED BLACKOUT HEADLIGHT EPR FB-988    988
                                                                        ITEM 3

 PARTS MS51318-1          GP=000010609 NO=01 LIFE=        HEADLIGHT, BLACKOUT

 17/04/78    412.0 027.0B U C C A    Y N 0609       G.1    0.1 1          REPLACED SEALED BEAM IN HEADLIGHT. ITEM   848,
                                                                        2. EPR FB-848,988

 PARTS 4880               GP=000010601 NO=01 LIFE=        LAMP, SEAL BEAM

 17/04/78 1  412.0 027.0C U O O A    Y Y 0610       0.1    0.1 1          REPLACED OIL PRESSURE SWITCH. EPR         988
                                                                        FB-988 ITEM 4

 PARTS MI-1421            GP=000010610 NO=01 LIFE=        SWITCH, PRESSURE

 17/04/78 1  412.0 027.0D U C C A    N N 1414       0.1    0.1 1          PUSH RETAINING RING BACK INTO LOCK        988
                                                                        POSITION. EPR FB-988 ITEM 5

 17/04/78    412.0 027.0E U C C A    Y N 1802       0.1    0.1 1          REPLACED MISSING BOLT AND NUT ON LEFT     988
                                                                        SIDE PANEL ITEM 6 EPR FB-988

 PARTS 17C-16H            GP=000011802 NO=01 LIFE=        SCREW, CAP, HEX HEAD
       27E-6H                000011802    01              WASHER, FLAT

 17/04/78 1  412.0 027.0F U C C A    N N 0612       0.1    0.1 1          CLEANED + WASHED BATTERY BOX. EPR         988
                                                                        FB-988

 17/04/78 1  412.0 027.0G U O O A    Y Y 0612       0.2    0.2 1          REPLACED MASTER DISCONNECT SWITCH. EPR    988
                                                                        FB-988 ITEM 8

 PARTS 564625             GP=000010612 NO=01 LIFE=        DISCONNECT SWITCH

 17/04/78    412.0 027.0H U C C A    N N 0401       0.2    0.2 1          TIGHTENED CLAMPS ON EXHAUST PIPE. EPR     988
                                                                        FB-988 ITEM 9

 17/04/78    412.0 027.0I U C C A M N N 0305        0.1    0.1 1          TIGHTENED CLAMP ON TURBOCHARGER OIL       988
                                                                        SUPPLY LINE. ITEM 10 EPR FB-988

 17/04/78    412.0 027.0J U O O A    Y Y 1411       0.3    0.3 1          TIGHTENED HOSE FITTING ON STEERING        988
                                                                        CYLINDER ON RIGHT SIDE ITEM 11 EPR
                                                                        FB-988
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,951
D         S OHR    A    T S E E T Q A C   G  CO     CH     MH    M OT
A         H DON    C    A / C C M A M S   R  OL     LO     AO    E IT                                      E
T         F OUD    T    S U H H '   T F   P  NY     OU     NU    N AM                                      P
E         T HRS    N    K     R S            T      CR     R       GE                                      R
                                                    KS                  DESCRIPTION                        S
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17/04/78    412.0 027.0K U O O A     Y N 2408        0.2    0.2 1     STRAIGHTENED HYDRAULIC ACCUMULATOR      988
                                                                     COVER. ITEM 12 EPR FB-988

17/04/78    412.0 027.0L U C C A     Y N 1503        0.1    0.1 1     INSTALLED COTTER PIN ON PINTLE HOOK     988
                                                                     ITEM 13 EPR FB-988

PARTS 770               GP=000011503 NO=01 LIFE=          PIN, COTTER

17/04/78    412.0 027.0M U C C A     Y N 0304        0.2    0.2 1     REPLACED AIR INTAKE FILTER. ITEM 14 EPR 988
                                                                     FB-988

PARTS P11-7437          GP=000010304 NO=01 LIFE=          FILTER, ELEMENT, AIR, OUTER
      P11-9373             000010304    01                FILTER, ELEMENT, AIR, INNER

17/04/78    412.0 027.0N U O O   M Y Y 2406        0.1    0.1 1     TIGHTENED TUBE FITTING ON THE EMERGENCY 988
                                                                     GROUND STEERING PUMP. ITEM 15 EPR
                                                                     FB-988

17/04/78    412.0  27.00 U O O A     N N 0612        0.1    0.1 1     TAPED AND RE-ROUTED BATTERY CABLES. EPR 988
                                                                     FB-988
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,952
D         S OHR   A    T S E E T Q A C   G  CD     CH     MH    M DT                                                      E
A         H DON   C    A / C C M A M S   R  OL     LO     AO    E IT                                                      P
T         F OUD   T    S U H H '   T F   P  NY     OU     NU    N AM                                                      R
E         T MRS   N    K     R S            T      CR      R      GE                                                      S
                                                   KS                    DESCRIPTION

15/11/77 1 113.3 001.0  U O O I M Y Y 0608  00.0  00.2  00.2 1  00.1 ROLLER DRIVE ACTUATOR SWITCH LOCKED IN      651
                                                                     NO-GO POSITION BY MUD LODGED BETWEEN
                                                                     SWITCH ACTUATOR ARM AND SWITCH BODY.
                                                                     REMOVED MUD. EPR FB-651

PARTS UNK                  GP=000070608 NO=01 LIFE=      ROLLER DRIVER ACTUATOR SWITCH ROLLER LIFT CYLINDER

28/11/77 2 134.6 002.0  U O O A M Y Y 7470  00.0  00.5  01.0 2  00.0 INSTALLED 4 EACH; PLATES, PLOW BOLTS, +   691
                                                                     NUTS IN FRONT CLEANER BAR ASSY EPR
                                                                     FB-691

PARTS 2545902              GP=000077470 NO=04 LIFE=134.6 PLATE
      6514527                 000077470    04     134.6 BOLT
      17D-6                   000077470    04     134.6 NUT

07/12/77 2 162.3 003.0  S C C A C Y N 0000  00.0  00.2  00.4 2  00.0 PERFORMED 50 HOUR MAINTENANCE EPR          693
                                                                     FB-693

08/12/77 2 162.6 004.0  U O O A M Y Y 7470  00.0  00.7  01.4 2  00.0 INSTALLED 8 PLATES IN THE REAR CLEANER     694(691-1)
                                                                     BAR ASSY EPR FB-694(691-1)

PARTS 2545902              GP=000077470 NO=08 LIFE=162.6 PLATE
      6514527                 000077470    16     162.6 BOLT
      25E18H                  000077470    16     162.6 WASHER FLAT
      17D-3H                  000077470    16     162.6 NUT

09/12/77 2 167.2 005.0  U O O A M N N 7470  00.0  02.8  02.8 1  00.0 ODIFY + INSTALL 16 CLEANER PLATES-(8NEW   695
                                                                     PLATES + 8 OLD PLATES). PLATES WERE CUT
                                                                     TO A WIDTH OF 3.3 INCHES. EPR FB-695

PARTS 2545902              GP=000077470 NO=08 LIFE=167.2 PLATE
      6514527                 000077470    16     167.2 BOLT
      25E18H                  000077470    16     167.2 WASHER FLAT
      17D-3H                  000077470    16     167.2 NUT

10/12/77 1 168.0 006.0  U O C A M Y Y 7470  00.0  00.8  00.8 1  00.2 PLATES LOOSE ON CLEANER BAR ASSEMBLY.      582
                                                                     REMOVE ALL PLATES TO PREVENT LOSS OF
                                                                     PLATES AND DAMAGE TO CLEANER BAR
                                                                     ASSEMBLY EPR FB-582
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,952
 D        S OHR   A     T S E E T Q A C   G  CD     CH    MH    M DT                                  E
 A        H DON   C     A / C C M A M S   R  OL     LO    AO    E IT                                  P
 T        F OUD   T     S U H H *   T F   P  NY     OU    NU    N AM                                  R
 E        T MRS   N     K     R S            T      CR    R       GE                                  S
                                                    KS                  DESCRIPTION

10/12/77 1 168.0 006.0A U O C A C Y Y 1202  00.0  03.0  03.0 1  00.2 ICE IN THE AIR LINES PREVENTING BRAKES    583
                                                                     FROM RELEASING. VEHICLE MOVED INTO
                                                                     BUILDING HOT AIR APPLIED TO THAW ICE
                                                                     EPR FB-583
CRITICALITY FACTOR= 1.00

15/12/77 1 199.8 007.0  S C C A M Y N 0000  00.0  00.4  00.8 2  00.0 PERFORMED 50 HOUR MAINTENANCE EPR         450
                                                                     FB-450

03/01/78 1 230.1 008.0  U O O I M Y Y 0900  00.0  00.5  00.5 1  00.1 REPLACED CAM VALVE, TF DRUM DRIVE EPR     498
                                                                     FB-498

PARTS P/N 2548187          GP=000070900 NO=01 LIFE=00UNK CAM VALVE, TF DRUM LIFT CYLINDER

09/01/78 1 255.9 008.1  S O D A M Y N 0000        1.2   2.0 1       PERFORMED 250 HR. MAINTENANCE PER LUBE    973
                                                                     ORDER L05-3840-207-12 EPR FB-973

PARTS 569022-03            GP=0000 0900 NO=01 LIFE=      VENT ASSY, BREATHER, MIDMOUNT
      569022-03               0000 1000    01            VENT ASSY, BREATHER, AXLE
      AC43987                 0000 1204    01            FILTER ELEMENT, FL, POWER CLUSTER

27/02/78 1 355.2 009.0  U C C A M Y N 0609  00.0  00.2  00.2 1  00.0 REPLACED LAMP IN CURBSIDE TAILLIGHT EPR   805
                                                                     FB-805

PARTS MS15570-623          GP=000070609 NO=01 LIFE=      LAMP,INCANDESCENT

27/02/78 2 355.2 009.0A S C C A M Y N 0000  00.6  00.3  00.6 2  00.0 PERFORMED 50 HOUR MAINTENANCE EPR         806
                                                                     FB-806

28/02/78 2 373.3 010.0  U C C A M Y N 0609  00.0  00.1  00.1 1  00.0 REPLACED PARKING LIGHT LAMP EPR FB-818    818

PARTS MS15570-623          GP=000070609 NO=01 LIFE=      LAMP,INCANDESCENT

08/03/78 1 402.6  10.1  S C C A M Y N 0000        0.4   0.4 1       50 HOUR SERVICE. EPR FB-1109              1109

17/04/78   412.0 011.0A U O O A   Y Y 2403        0.5   0.5 1       RETHREAD AND REINSTALL DRUM CONTROL       946
                                                                     VALVE ROD EPR FB-946

17/04/78   412.0 011.0B U O O A   Y Y 1261        2.0   4.0 2       REPLACED PARKING BRAKE CABLE. EPR         793,947
                                                                     FB-793,947

PARTS 3461W65              GP=   071201 NO=01 LIFE=      CABLE, PARKING BRAKE
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,952
 D           S OHR   A     T S E E T Q A C    G  CO     CH     MH    M OT
 A           H DON   C     A / C C M A M S    R  OL     LO     AO    E IT                                    E
 T           F OUD   T     S U H H '   T F    P  NY     OU     NU    N AM                                    P
 E           T MRS   N     K     R S            T       CR      R      GE                                    R
                                                        KS                   DESCRIPTION                     S
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17/04/78   412.0 011.0C U O O A   Y Y 2403          1.0     1.0 1          REMOVED DETENT SOLENOID SWITCH, CLEANED  948
                                                                          AND REINSTALLED. EPR FB-948
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,953 .
 D          S OHR   A    T S E E T Q A C   G  CO     CH      MH     M OT                                        E
 A          H DON   G    A / C C M A M S   R  OL     LO      AO     E IT                                        P
 T          F OUD   T    S U H H '   T F   P  NY     OU      NU     N AM                                        R
 E          T MRS   N    K     R S            T      CR      R      GE                                          S
                                                     KS                   DESCRIPTION

07/12/77 2 064.8 001.0  U O O A M N N 0000  00.0  00.5  01.0 2  00.0 DRAINED WATER FROM COOLING SYSTEM          698
                                                                    REFILLED WITH 15 GAL. ANTIFREEZE EPR
                                                                    FB-698

10/12/77 1 082.0 002.0  U C C A M N N 0300  00.0  00.3  00.3 1  00.2 PARKED VEHICLE IN HEATED AREA TO THAW      523
                                                                    OUT SYSTEMS EPR FB-523

12/12/77 2 096.1 003.0  U O O A M Y Y 2406  00.0  00.5  00.8 2  00.0 REPLACE DEFECTIVE HYDRAULIC PRESSURE       750
                                                                    VALVE EPR FB-750

PARTS 1PD11-F6T-6S         GP=000012406 NO=01 LIFE=09611 VALVE, PRESS. ROC/RLV

15/12/77 1 098.7 004.0  S C C A M Y N 0000  00.0  00.5  01.0 2  00.0 PERFORMED 50 HOUR MAINTENANCE ADDED 1/2  460
                                                                    PINT BRAKE FLUID ADDED 22.4 ML OIL TO
                                                                    MIDMOUNT BEARING ASSEM. EPR FB-460

PARTS                      GP=000011201 NO=00 LIFE=00000 BRAKE FLUID, 1/2 PINT
                              000010900    00     00000 OIL, MIDMOUNT, 22.4 ML

05/01/78 2 137.0 005.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 6 QUARTS OF HYDRAULIC OIL

06/01/78 2 142.4 005.1  U C C A M N N 2408  00.0  00.1  00.1 1  00.0 REPLACED CAP SCREW, LOCK WASHER, AND      514
                                                                    FLAT WASHER IN ACCUMULATOR COVER EPR
                                                                    FB-514

PARTS 17C-616H             GP=000062408 NO=01 LIFE=142.4 SCREW, CAP
      24E-6H                  000062408    01     142.4 WASHER, LOCK
      25E-17H                 000062408    01     142.4 WASHER, FLAT

09/01/78 1 150.1 006.0  S C C A M Y N 0000  00.0  00.7  01.3 3  00.0 PERFORMED 50 HOUR MAINTENANCE ADDED 6     529
                                                                    ML OIL TO MIDMOUNT BEARING EPR FB-529

PARTS                      GP=000010900 NO=00 LIFE=00000 OIL, MIDMOUNT (6 ML)

22/02/78 2 180.1 007.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 2 QTS OF ENGINE OIL.

23/02/78 2 190.5 008.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 4 QUARTS OF ENGINE OIL

23/02/78 2 190.5 008.0A U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED ONE QUART OF HYDRAULIC OIL
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,953
 D         S OHR    A      T S F E T Q A C    G  CD     CH      MH     M DT                                                E
 A         H DCN    C      A / C C M A M S    R  OL     LO      AO     E IT                                                P
 T         F OUD    T      S U H H *   T F    P  NY     OU      NU     N AM                                                R
 E         T MRS    N      K     R S             T      CR      R        GE                                                S
                                                        KS                      DESCRIPTION

 23/02/78 2 190.9 009.0  U O O A M Y Y 0710  00.0  01.1  01.1 1  00.4 REPLACE DEFECTIVE SOLENOID FOR 1ST GEAR  781
                                                                      EPR FB-781
CRITICALITY FACTOR= 1.00

 PARTS 236402               GP=000010710 NO=01 LIFF=190.9 SOLENOID

 23/02/78 2 190.9 009.0A U O O A M Y Y 0601  00.0  00.4  00.4 1  00.0 ADJUST FAN BELTS EPR FB-782               782

 24/02/78 2 202.8 010.0  S C C A M Y N 0000  00.0  00.7  01.4 2  00.0 PERFORMED 50 HOUR MAINTENANCE ADDED 2     792
                                                                      QUARTS TRANSMISSION OIL ADDED 2 QUARTS
                                                                      ENGINE OIL EPR FB-792

 24/02/78 2 203.0 011.00 U O O I M Y N 2406  00.0  00.3  00.3 1  00.0 REPLACED PIN IN DUST COVER ASSEMBLY       789
                                                                      HANDLE EPR FB-789

 PARTS N/A                  GP=000012406 NO=01 LIFE=UNK   PIN

 25/02/78 2 214.2 012.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GALLON OIL TO ENGINE

 01/03/78 1 243.6 013.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GALLON OIL TO ENGINE

 01/03/78 1 243.6 013.0A U C C A M N N 0000  00.0  00.1  00.1 1  00.1 ADDED 2 GALLONS OF FLUID TO HYDRAULIC
                                                                      TANK

 01/03/78 1 246.0 014.0  U O O A M N N 1100  00.0  00.3  00.3 1  00.0 REPLACED AXLE STOP AND PIN EPR FB-809     809

 PARTS 2546303              GP=000011100 NO=01 LIFE=      AXLE STOP
       2546295                 000011100    01            PIN, QUICK RELEASE

 27/02/78 2 228.7 015.0  U O O A M Y Y 0505  00.0  01.4  01.4 1  00.0 RE TIGHTEN FAN BELTS EPR FB-828           828
CRITICALITY FACTOR= 1.00

 28/02/78 2 239.3 016.0  U O O A M N N 0106  00.0  00.9  00.9 1  00.0 REMOVED AND REPLACED BROKEN PRESSURE      829
                                                                      SENDER EPR FB-829

 PARTS 5654312              GP=000010106 NO=01 LIFE=      PRESSURE SENDER

 04/03/78   257.5 017.0  S O O A M Y N 0000  00.0  04.4  05.5 2  00.0 CONDUCTED 250 HOUR MAINTENANCE -          837
                                                                      UNCOUPLE 2 MEN 7 MINS. ADDED 12 OZ
                                                                      LUBRICANTTO MIDMOUNT BEARING 6 QTS OF
                                                                      LUBRICANT DIFFERENTIAL, 32 QTS OF
                                                                      ENGINE OIL CLEAN TRANS. BREATHER, CLEAN
                                                                      CRANKCASE BREATHER REMOVE AND REPLACE
                                                                      ITEMS LISTED BELOW. EPR FB-837

 PARTS MS-35802-3           GP=000010106 NO=02 LIFE=      FILTER ELEMENT, OIL, FULL FLOW
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,953
 D          S OHR    A     T S E E T Q A C    G  CD      CH      MH     M OT                                          E
 A          H OON    C     A / C C M A M S    R  OL      LO      AO     E IT                                          P
 T          F OUD    T     S U H H *   T F    P  NY      OU      NU     N AM                                          R
 E          T MRS    N     K     R S             T       CR      R        GE                                          S
                                                         KS                       DESCRIPTION

        9311                      000010106    02                FILTER ELEMENT, OIL, BYPASS
        5678                      000010309    02                CARTRIDGE, FUEL FILTER
        LF-511                    000010721    01                FILTER ELEMENT, OIL, TRANSMISSION
        299080                    000010508    01                FILTER ELEMENT, WATER, CORROSION RESIST
        AC43887                   000011202    01                FILTER ELEMENT, FL, POWER CLUSTER
        569022-03                 000010900    01                VENT ASSY, BREATHER, MDMT
        569022-03                 000011100    01                VENT ASSY, BREATHER, AXLE
        569020-03                 000010700    01                VENT ASSY, BREATHER, TRANSMISSION

15/03/78 2 297.6  17.1  S C C A M Y N 0000          1.0    2.0 2         50 HOUR SERVICE. EPR FB-1108              1108

27/03/78 1 339.5  18.0  U O O A C Y N 1802  00.0    0.1    0.1 1  00.0 WELDED CRACK ON ENGINE STARTING AID         920
                                                                       MOUNTING BRACKET EPR FB-920

19/04/78   342.0 019.0  U C C A   Y N 0609          0.1    0.1 1         REPLACED FLOOD LAMP EPR FB-971 ITEM 1     971

PARTS 4880                GP=000010609 NO=01 LIFE=         LAMP

19/04/78   342.0 019.0A U C C A   Y N 2407          0.1    0.1 1         REINSTALLED HANDLE ON GLOBE VALVE,        971
                                                                       DOLLY WHEEL SHUT OFF. EPR FB-971 ITEM 2

19/04/78   342.0 019.0B U O O A   N N 0612          0.1    0.1 1         CLEANED AND SERVICED BATTERIES AND        971
                                                                       BATTERY BOX. EPR FB-971

19/04/78   342.0 019.0C U O O A   N N 2202          0.4    0.4 1         REINSTALLED MIRRORS. EPR FB-971 ITEM 4    971

19/04/78   342.0 019.0D U O O A   Y N 0105          0.3    0.3 1         TIGHTENED VALVE COVER BOLTS EPR FB-971    971
                                                                       ITEM 5

19/04/78   342.0 019.0E U C C A   Y N 0609          0.1    0.1 1         REPLACED SEALED BEAM ON SERVICE LIGHT.    971
                                                                       EPR FB-971 ITEM 6

PARTS 4880                GP=000010609 NO=01 LIFE=         LAMP

19/04/78   342.0 019.0F U O O A   Y N 0610          0.1    0.1 1         TIGHTENED FITTINGS AT SPEEDOMETER         971
                                                                       SENDING UNIT. EPR FB-971 ITEM 7

19/04/78   342.0 019.0G U O O A   Y N 0610          0.1    0.1 1         TIGHTENED FITTING AT LOCK UP SENDING      971
                                                                       UNIT. EFR FB-971 ITEM 8

19/04/78   342.0 019.0H U F F A   Y Y 0302          7.0    7.0 1         REPLACED FUEL PUMP. EPR FB-969            969
CRITICALITY FACTOR= 1.00

PARTS 204161              GP=000010302 NO=01 LIFE=         PUMP FUEL
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,953
 D          S OHR   A    T S E E T Q A C   G  CD    CH    MH    M DT                                     E
 A          H DON   C    A / C C M A M S   R  OL    LO    AO    E IT                                     P
 T          F OUD   T    S U H "  *  T F   P  NY    OU    NU    N AM                                     R
 E          T MRS   N    K     R S            T     CR    R       GE                                     S
                                                    KS                   DESCRIPTION

19/04/78    342.0  19.0I U O O A   N N 0612        0.1   0.1 1          RE-ROUTED BATTERY CABLES. EPR FB-971    971

19/04/78    342.0  19.0J U C C A   N N 0612       0.1   0.11            TIGHTENED BATTERY CABLES AT MASTER      971
                                                                      SWITCH. EPR FB-971
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,954
 D          S OHR   A     T S E E T Q A C    G  CD      CH      MH     M DT                                          E
 A          H DON   C     A / C C M A M S    R  OL      LO      AO     E IT                                          P
 T          F OUD   T     S U H H '   T F    P  NY      OU      NU     N AM                                          R
 E          T HRS   N     K     R S             T       CR       R      GE                                           S
                                                        KS                     DESCRIPTION

12/12/77 1 095.7 001.0  U O O A C Y Y 1601  00.0  00.2  00.2 1  00.1 REWELD CURBSIDE SPRING STRAP EPR FB-491  491

15/12/77 1 098.7 002.0  S C C A M Y N 0000  00.0  00.3  00.6 2  00.0 PERFORMED 50 HOUR MAINTENANCE EPR         460
                                                                      FB-460

03/01/78 1 123.8 003.0  U O O A M Y Y 7470  00.0  00.2  00.2 1  00.1 REMOVED TIRE SCRAPER ASSEMBLY. EPR        499
                                                                      FB-499

04/01/78 1 124.5 003.0A U F O A C Y N 7470  00.0  00.3  00.3 1  00.0 REWELDED LOCK ARM EXTENSION ON TIRE       499
                                                                      SCRAPER ASSY EPR FB-499

06/01/78 1 141.6 004.0  U F F A C Y Y 1601  00.0  00.2  00.2 1  00.0 REWELDED CURBSIDE SPRING STRAP EPR        502(
                                                                      FB-502(491-1)

06/01/78 1 141.6 004.0A U O O A M Y Y 7469  00.0  00.2  00.2 1  00.1 REPLACED CAP SCREW, WASHERS, AND NUT IN  503
                                                                      CURBSIDE STRUT CONNECTION TO DRUM FRAME
                                                                      EPR FB-503

PARTS 17C-1272H          GP=000067469 NO=01 LIFF= UNK  SCREW CAP, HEX HEAD 3/4-10 4 1/2 IN LG
      65D-12H               000067469    01       UNK  NUT, SELF LOCKING HEXAGON 3/4-10 UNC
      27E-12H               000067469    03       UNK  WASHER, FLAT 3/4 IN ID, 1 1/8 IN OD CURBSIDE STRUT, HOOD
                                                            ASSY

06/01/78 1 141.6 004.0B U O O A M Y Y 7470  00.0  00.2  00.2 1  00.1 REPLACED CAP SCREW, WASHERS, NUT IN       504
                                                                      CURBSIDE CLEANER SPRING EPR FB-504

PARTS 17C-880H           GF=    067470 NO=01 LIFF= UNK  SCREW, CAP, HEX HEAD, 1/2-13
      27E-21H                   067470    02       UNK  WASHER, FLAT 5/16 ID 2 3/4 OF
      65D-08H                   067470    01       UNK  NUT, SLFLKG, HEXAGON 1/2-13 CLEANER SPRING, DRUM CLEANER

06/01/78 1 141.6 004.0C U C C A M Y N 0000  00.0  00.2  00.2 1  00.1 ADDED 2 GALLONS OF HYDRAULIC FLUID

06/01/78 1 149.7 005.0  U C C A   Y N 7470         0.1   0.1 1       MANUALLY PLACED TIRE SCRAPERS BACK INTO  972
                                                                      POSITION. EPR FB-972

09/01/78 1 150.1 006.0  S C C A M Y N 0000  00.0  00.8  01.6 3  00.0 PERFORMED 50 HOUR MAINTENANCE ADDED 1/2  529
                                                                      PINT BRAKE FLUID EPR FB-529

PARTS                    GF=000061202 NO=   LIFF=       BRAKE FLUID (1/2 PINT)
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,954
 D         S OHR   A     T S E E T Q A C   G  CD     CH     MH     M DT                                                   E
 A         H DON   C     A / C C H A M S   R  OL     LO     AO     E IT                                                   P
 T         F OUD   T     S U H H *   T F   P  NY     OU     NU     N AM                                                   R
 E         T HRS   N     K     R S            T      CR     R        GE                                                   S
                                                     KS                       DESCRIPTION

02/02/78 1 175.6 007.0  U O O I M N N 1201  00.0  00.1  00.1 1  00.0 REPLACED SHEAR PIN IN HAND WINCH          468(S-1)
                                                                       PARKING BRAKE EPR FB-468(S-1)

PARTS                   GP=000061201 NO=01 LIFE= UNK  ROLL PIN HAND WINCH, PARKING BRAKE

15/02/78 1 178.0 008.0  U O O A C Y Y 2403  00.0  00.3  00.3 1  00.0 RETHREADED AND REINSTALLED BALLAST        742
                                                                       CONTROL ROD EPR FB-742

23/02/77 1 186.4 009.0  U O O A M Y Y 7470  00.0  01.0  01.0 1  00.0 REMOVED FOUR TIRE SCRAPER ASSEMBLIES      768
                                                                       OFF THE REAR TIRES. EPR FB-768

23/02/78 2 190.9 010.0  U O O A M Y Y 1201  00.0  00.3  00.3 1  00.0 REPLACE BROKEN HAND WINCH PIN IN          784
                                                                       PARKING BRAKE EPR FB-784

PARTS DE-5365-417-1     GP=000061201 NO=01 LIFE=015.3 PIN, HAND WINCH

24/02/78 2 202.8 011.0  S O O A M Y N 0000  00.0  00.5  01.0 2  00.0 PERFORMED 50 HOUR MAINTENANCE, ADDED      792
                                                                       1/2 PINT BRAKE FLUID EPR FB-792

28/02/78 1 232.5 012.0  U C C A M Y N 7470  00.0  00.2  00.2 1  00.0 REPLACED CAP SCREWS AND NUTS IN CLEANER  817
                                                                       BLADES EPR FB-817

PARTS 17C-832H          GP=000067470 NO=03 LIFE=      SCREWS, CAP
      65D-08H              000067470    03            NUT, HEXAGON

28/02/78 2 242.5 013.0  U C C A M Y Y 7470  00.0  00.2  00.2 1  00.0 REPLACED CAP SCREWS, NUTS, AND WASHERS    817
                                                                       IN CLEANER BLADES EPR FB-817

PARTS 17C-8324          GP=000067470 NO=03 LIFE=010.0 SCREWS, CAP
      65D-08H              000067470    03      010.0 NUT, HEXAGON
      27E-21H              000067470    06            WASHER, FLAT

04/03/78 1 257.5 014.0  S O O A M Y N 0000  00.0  00.5  00.5 1  00.2 250 HOUR MAINTENANCE ADDED 1 PINT BRAKE  837
                                                                       FLUID TO MS MASTER CYLINDER. EPR FB-837

PARTS AC43887           GP=000061204 NO=01 LIFE=      FILTER ELEMENT, FL, POWER CLUSTER

15/03/78 2 297.6  14.1  S C C A M Y N 0000         0.2   0.4 2        50 HOUR SERVICE. EPR FB-1108              1108

22/03/78 1 337.6  14.2  U F F A C Y N 7469         1.2   1.2 1  00.0 REWELDED CRACKS ON VIBRATORY HOOD         512(S-1)
                                                                       ASSEMBLY. EPR FB-512(S-1)
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMEGE1 TEST ITEM ,954
 D          S OHR   A    T S E E T Q A C   G  CD     CH     MH    M OT                                        E
 A          H DON   C    A / C C M A M S   R  OL     LO     AO    E IT                                        P
 T          F OUD   T    S U H H *   T F   P  NY     OU     NU    N AM                                        R
 E          T MES   N    K     R S            T      CR     R       GE                                        S
                                                     KS                        DESCRIPTION

24/03/78 1 339.6 015.0  U O O A M Y N 0609  00.0  00.1  00.1 1  00.0 REPLACED INCANDESCENT LAMP, BRAKE        903
                                                                     LIGHT. EPR FB-903

PARTS MS35478-1683          GP=000060609 NO=01 LIFE=       LAMP, INCANDESCENT, COMPOSITE REAR LIGHT, ROADSIDE

24/03/78 1 339.6 015.0A U O O A C Y N 7470  00.0  00.5  01.0 2  00.0 REWELDED EXTENSIONS TO SCRAPER LOCKING   908
                                                                     ARMS EPR FB-908

24/03/78 1 339.6 015.0B U F F A C Y Y 1810  00.0  00.3  00.3 1  00.0 REWELD DAMAGED WELDS AT FRONT OF         909
                                                                     BALLAST BOX, TOP CENTER EACH SIDE DUMP
                                                                     CYLINDER ROD END PIN CONNECTION. EPR
                                                                     FB-909

27/03/78 1 339.6  16.0  U O O A C Y Y 0000  00.0   0.1   0.1 1  00.0 REWELDED LEAF SPRING CLAMP. EPR          918(491-2)
                                                                     FB-918(491-2)

27/03/78 1 339.5  16.0A U O O A C Y Y 0615  00.0   0.1   0.1 1  00.0 WELDED WATER TANK MOUNTING BRACKET. EPR  919
                                                                     FB-919

19/04/78   340.0 017.0  U C C A   N N 7470         0.1   0.1 1         TIGHTENED BOLTS ON DRUM CLEANER. EPR     949
                                                                     FB-949

19/04/78   340.0 017.0A U O O     Y Y 1811         0.5   0.5 1         WELDED CRACK IN RIGHT WATER TANK         950
                                                                     MOUNTING BRACKET EPR FB-950

19/04/78 1 340.0  17.0B U C C A M Y N 0609         0.1   0.1 1         REPLACED TAILLIGHT DOOR (LENS). EPR      788(S-1)
                                                                     FB-788(S-1)

PARTS 11639535              GP=000060609 NO=01 LIFE=       DOOR ASSY, TAILLIGHT
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,955
 D        S OHR    A     T S E E T Q A C    G   CD      CH      MH     M DT                                                   E
 A        H DON    C     A / C C M A M S    R   OL      LO      AO     E IT                                                   P
 T        F OUC    T     S U H H '   T F    P   NY      OU      NU     N AH                                                   R
 E        T HRS    N     K     R S              T       CR      R        GE                                                   S
                                                        KS                       DESCRIPTION

 21/11/77 2 029.5 001.0  S O O A M Y N 0000  00.0  00.7  02.1 3  00.0 INSTALLED ROPS EPR FB-753                           753

 PARTS 2545700              GP=000011801 NO=01 LIFE=00000 ROLL-OVER PROTECTIVE STRUCTURE

 28/11/77 2 029.5 001.0A S O O A M N N 0000  00.0  00.2  00.4 2  00.0 INSTALLED WINDSHIELD ASSY. EPR FB-753               753

 26/11/77 2 029.5 001.0B S O O A M N N 0000  00.0  01.0  03.0 3  00.0 INSTALL CAB FRAME AND CANVAS COVER EPR              753
                                                                      FB-753

 02/12/77 1 035.5 002.0  U C C A M Y N 0000  00.0  00.2  00.2 1  00.1 ADDED 3 GALLON HYDRAULIC FLUID (OE-10)

 03/12/77 2 037.1 003.0  U O O A C Y Y 2406  00.0  00.3  00.3 1  00.0 REMOVED BROKEN HOSE FITTING GLANGE.                 754
                                                                      MADE NEW FLANGE + INSTALLED HOSE +
                                                                      FITTING TO BY PASS VALVE EPR FB-754

 05/12/77 1 039.3 004.0  U O O A M N N 2406  00.0  00.1  00.1 1  00.0 REPLACED BROKEN HYDRAULIC HOSE FITTING              755(754-1)
                                                                      TO 2-WAY VALVE EPR FB-755(754-1)

 PARTS J90SL4               GP=000012406 NO=01 LIFE=039-3 FITTING, HOSE

 03/12/77 2 039.3 004.0A U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 2 QUARTS OF TRANSMISSION OIL

 06/12/77 1 048.8 005.0  U O O A M Y Y 1410  00.0  01.7  03.4 2  00.0 REPLACED STEERING VALVE ASSEMBLY EPR                756
                                                                      FB-756
CRITICALITY FACTOR= 1.00

 PARTS HSB40011             GP=000011410 NO=01 LIFE=UNK    VALVE,STERRING

 06/12/77 1 050.0 006.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 2 QTS. TRANSMISSION OIL

 06/12/77 1 050.0 006.0A U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GAL. HYDRAULIC OIL

 08/12/77 1 056.7 007.0  S C C A M Y N 0000  00.0  00.9  01.8 2  00.0 PERFORMED 50 HOUR MAINTENANCE ADD 1                 508
                                                                      QUART OIL TO MIDMOUNT BEARING EPR
                                                                      FB-508

 09/12/77 1 064.1 008.0  U F O A M Y Y 1414  00.0  00.1  00.1 1  00.0 REPLACED SEAL KIT IN STEERING VALVE                 757(756-1)
                                                                      ASSEMBLY EPR FB-757(756-1)
CRITICALITY FACTOR= 1.00

 PARTS 996330               GP=000011414 NO=01 LIFE=015.3 KIT, SEAL REPAIR
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,955
 D          S OHR   A      T S E E T Q A C    G  CO     CH      MH     M DT                                            E
 A          H DON   C      A / C C M A M S    R  OL     LO      AO     E IT                                            P
 T          F OUD   T      S U H H '   T F    P  NY     OU      NU     N AM                                            R
 E          T HRS   N      K     R S             T      CR      R        GE                                            S
                                                        KS                    DESCRIPTION

09/12/77 1 067.8 009.0  U C C A M Y N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GALLON HYDRAULIC OIL

10/12/77 1 077.7 010.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GAL. OF ENGINE OIL

10/12/77 1 077.7 010.0A U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GAL. OF HYDRAULIC FLUID.

10/12/77 1 077.7 010.0B U C C A M N N 0000  00.0  00.1  00.1 1     . ADDED 2 QTS OF COOLANT TO THE SURGE
                                                                     TANK.

16/12/77 1 093.7 011.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.1 ADDED 1 GALLON HYDRAUC FLUID TO
                                                                     RESERVIOR

16/12/77 1 093.8 012.0  U O O A M N N 0613  00.0  00.1  00.1 1  00.4 RECONNECTED LOOSE CURBSIDE SERVICE        493
                                                                     HEADLIGHT TERMINAL CONNECTION EPR
                                                                     FB-493

16/12/77 2 098.7 013.0  U O O A N Y Y 0000  00.0  00.1  00.1 1  00.1 ADDED 3 GALLONS HYDRAULIC OIL EPR         465
                                                                     FB-465

17/12/77 1 099.7 014.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 1/2 GALLON FLUID (OE-10) TO
                                                                     HYDRAJLIC RESERVIOR.

17/12/77 1 102.6 015.0  S C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 2 QUARTS HYDRAULIC CIL

21/12/77 1 108.9 016.0  S C C A M Y N 0000  00.0  00.9  02.7 3  00.0 ADDED 60 ML OF LUBRICANT TO PWR DECT.    485
                                                                     MIDMOUNT BEARING. .25 HR, 3 MEN TO
                                                                     UNCOUPLE .50 HR, 3 MEN TO PERFORM
                                                                     MAINTENANCE AND RECOUPLE 50 HOUR
                                                                     MAINTENANCE. EPR FB-485

23/01/78 3 136.2 017.0  U O O A M N N 1208  00.0  00.7  01.4 2  00.0 REMOVED BROKEN ADAPTOR FROM THE           585
                                                                     AUTOMATIC RESERVOIR DRAIN VALVE EPR
                                                                     FB-585

PARTS 246267              GP=000011208 NO=01 LIFE=UNK    ADAPTOR

23/01/78 2 140.0 018.0  U C C A M Y N 2202  00.0  00.1  00.1 1  00.0 REINSTALLED AND TIGHTEN NUT ON THE        595
                                                                     BOTTOM OF THE MIRROR HEAD, NUT HAD
                                                                     VIBRATED OFF EPR FB-595
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,955
 D          S OHR   A     T S E E T Q A C    G  CO     CH     MH     M DT                                          E
 A          H DCN   C     A / C C M A M S    R  OL     LO     AO     E IT                                          P
 T          F OUD   T     S U H H *   T F    P  NY     OU     NU     N AM                                          R
 E          T MRS   N     K     R S             T      CR     R        GE                                          S
                                                       KS                     DESCRIPTION

 28/01/78 1 155.0 019.0  U C C A M Y N 0000  00.0  00.1  00.1 1  00.1 ADDED 1/2 GALLON OIL TO THE ENGINE

 28/01/78 2 163.2 020.0  S C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 4 1/2 GALLONS HYDRAULIC OIL

 30/01/78 2 163.3 021.0  S C C A M Y N 0000  00.0  00.7  01.3 3  00.0 PERFORMED 50 HOUR MAINTENANCE EPR            631
                                                                      FB-631

 30/01/78 2 165.1 022.0  U O O A M Y Y 1208  00.0  00.3  00.3 1  00.0 INSTALL NEW AIR RESERVOIR DRAIN VALVE        632
                                                                      EPR FB-632

 PARTS 281932               GP=000011206 NO=01 LIFE=       VALVE, DRAIN

 31/01/78 2 170.2 023.0  U C C A M Y N 0609  00.0  00.2  00.2 1  00.0 REPLACED CURBSIDE SERVICE HEADLIGHT          620
                                                                      SEAL BEAM EPR FB-620

 PARTS 4880                 GP=000010609 NO=01 LIFE=UNK   LAMP,SEAL BEAM

 06/02/78 2 177.6 024.0  U C C A M N N 0000  00.0  00.7  01.4 2  00.0 REMOVE ROPS TO PREPARE VEHICLE FOR RAIL      711
                                                                      IMPACT TEST EPR FB-711

 13/02/78 2 178.8 025.0  U C C A M N N 0000  00.0  01.3  02.9 3  00.0 RE-INSTALL CAB FRAME, WINDSHIELD             731
                                                                      ASSEMBLY, CANVAS AND ROPS EPR FB-731

 10/03/78 1 184.4 026.0  U F F A C N N 2407  00.0  00.5  00.5 1  00.0 ADJUSTED DOLLY WHEEL HYDRAULIC SYSTEM        874
                                                                      PRESSURE TO 2100 LBS. EPR FB-874

 10/03/78 1 184.4 026.0A U F F A M Y Y 1410  00.0  00.5  00.5 1  00.0 ADJUSTED STEERING PRESSURE FROM 2700 TO      873
                                                                      2500 PSI EPR FB-873
CRITICALITY FACTOR= 1.00

 11/03/78 2 190.7 027.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 20 QUARTS OF HYDRAULIC OIL

 13/03/78 1 198.5 028.0  S C C A M Y N 0000  00.0  00.3  00.6 2  00.0 PERFORMED 50 HOUR MAINTENANCE EPR            865
                                                                      FB-865

 14/03/78 1 204.3 029.0  U O O A M Y Y 2406  00.0  00.2  00.2 1  00.1 TIGHTENED HOSE FITTING ON HYDRAULIC          876
                                                                      BYPASS VALVE(TWO WAY) EPR FB-876

 14/03/78 1 204.3 029.0A U C C A M N N 0000  00.0  00.2  00.2 1  00.1 ADDED 2 GALLONS OF HYDRAULIC FLUID
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,955
 U        S OHR   A     T S E E T Q A C   G  CO     CH     MH    M OT                                            E
 A        H DON   C     A / C C M A M S   R  OL     LO     AO    E IT                                            P
 T        F OUD   T     S U H H '   T F   F  NY     OU     NU    N AM                                            R
 E        T HRS   N     K     R S            T      CR     R       GE                                            S
                                                    KS                     DESCRIPTION

14/03/78 2 214.3 030.0  U C C A M N N 0000  00.0  00.3  00.3 1  00.0 ADDED 32 QUARTS OF HYDRAULIC OIL

14/03/78 2 214.7 031.0  U O O A M Y Y 2406  00.0  00.5  00.5 1  00.0 REPLACE AND RETIGHTEN FITTING ON           858
                                                                     HYDRAULIC HOSE ASSY AT THE 2 WAY VALVE
                                                                     EPR FB-858

16/03/78 1 226.0 032.0  U O O A M Y N 2406  00.0  00.2  00.2 1  00.0 RETIGHTEN FITTING ON HYDRAULIC HOSE        858(S-1)
                                                                     ASSEMBLY EPR FB-858(S-1)

18/03/78 1 243.4 033.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GALLON ENGINE OIL

18/03/78 1 243.4 033.0A U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 8 GALLONS HYDRAULIC OIL

20/03/78 1 251.0 034.0  S C C A M Y N       00.0  00.5  01.0 1  00.0 COMPLETED 250 HR MAINTENANCE. EPR          889
                                                                     FB-889

PARTS MS-35802-3         GP=000010106 NO=02 LIFE=         FILTER ELEMENT, OIL, FULL FLOW
      9311                  000010106    02               FILTER ELEMENT, OIL, BYPASS
      5678                  000010309    02               CARTRIDGE, FUEL FILTER
      LF-511                000010721    01               FILTER ELEMENT, OIL, TRANSMISSION
      299080                000010508    01               FILTER ELEMENT, WATER, CORROSION RESIST
      AC43887               000011202    01               FILTER ELEMENT, FL, POWER CLUSTER
      569022-03             000010900    01               VENT ASSY, BREATHER, MDMT
      569022-03             000011100    01               VENT ASSY, BREATHER, AXLE
      569020-03             000010700    01               VENT ASSY, BREATHER, TRANSMISSION

24/03/78 1 254.5 035.0  U C C A M N N 0000  00.0  00.3  00.3 1  00.1 ADDED 2 GALLONS OF LUBRICANT TO THE
                                                                     FRONT DIFFERENTIAL

24/03/78 1 254.5 035.0A U O O A M Y N 0609  00.0  00.2  00.2 1  00.0 REPLACE CURBSIDE SERVICE HEADLIGHT. EPR    906
                                                                     FB-906

PARTS 4880               GP=000010609 NO=01 LIFE=UNK      LAMP, SEAL BEAM

25/03/78 1 254.5  36.0  U F F A C N N 1802  00.0   0.7   1.4 2  00.0 REPLACED WINDSHIELD GLASS PANEL. EPR       917
                                                                     FB-917

PARTS 2545874            GP=000011802 NO=01 LIFE=         VISION PANEL

28/03/78   266.0 037.0  U O O A   Y Y 1201         1.0   1.0 1       REPLACED PARKING BRAKE PADS EPR FB-977     977

PARTS 129157             GP=000011201 NO=01 LIFE=         BRAKE CALIPER ASSY.
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMEGE1 TEST ITEM ,955
 D          S OHR   A    T S F E T Q A C   G  CO     CH     MH     M OT                                   E
 A          H DON   C    A / C C M A M S   R  OL     LO     AO     E IT                                   P
 T          F OUD   T    S U H H * T F     P  NY     OU     NU     N AM                                   R
 E          T MRS   N    K     R S            T      CR     R       GE                                    S
                                                     KS                    DESCRIPTION

28/03/78   266.2 038.0  U C C A   N N 2406         0.1    0.1 1     TIGHTENED FITTING AT VARIABLE         974
                                                                   DISPLACEMENT PUMP EPR FB-974 ITEM #1

28/03/78   266.2 038.0A U C C A   N N 2406         0.2    0.2 1     TIGHTENED COUPLING ON HYDRAULIC       974
                                                                   MANIFOLD EPR FB-974 ITEM 2

28/03/78   266.2 038.0B U O O A   Y Y 1411         0.1    0.1 1     TIGHTENED HYDRAULIC LINE FITTING AT   974
                                                                   ACCUMULATOR. EPR FB-974 ITEM 3

28/03/78   266.2 038.0C U O O A   N N 0401         0.2    0.2 1     REMOUNTED CLAMPS ON EXHAUST PIPE EPR  974
                                                                   FB-974 ITEM 4

28/03/78   266.2 038.0D U O O A   N N 0305         0.2    0.2 1     TIGHTENED TURBOCHARGER MOUNTING BRACKET 974
                                                                   BOLTS EPR FB-974 ITEM 5

28/03/78   266.2 038.0E U C C A   N N 0612         0.1    0.1 1     TIGHTENED BATTERY CABLE BOLTS. EPR    974
                                                                   FB-974 ITEM 6

28/03/78   266.2 038.0F U O O A   N N 0305         0.1    0.1 1     TIGHTENED FITTING ON OIL SUPPLY LINE AT 974
                                                                   TURBOCHARGER EPR FB-974 ITEM 7

28/03/78   266.2 038.0G U C C A   Y N 0609         0.1    0.1 1     REPLACE LEFT BRAKE LIGHT BULB. EPR    974
                                                                   FB-974 ITEM 8

PARTS MS35478-1683        GP=000010609 NO=01 LIFE=       LAMP INCANDESCENT

38/03/78   266.2 038.0H U C C A   Y N 0608         0.2    0.2 1     REPLACED BULB TORQUE CONVERTOR LOCK-UP 974
                                                                   INDICATOR EPR FB-974 ITEM 9

PARTS 456                 GP=000010607 NO=01 LIFE=       LAMP INCANDESCENT, TORQUE CONV. LOCK-UP

28/03/78   266.2 038.0I U C C A   Y N 0612         0.1    0.1 1     REPLACED MASTER SWITCH HANDLE. EPR    974
                                                                   FB-974 ITEM 10

PARTS 24025               GP=000010612 NO=01 LIFE=       HANDLE, SWITCH

28/03/78   266.2 038.0J U C C A   Y N 2201         0.1    0.1 1     REPLACED BOLT IN CANVAS CAB FRAME EPR 974
                                                                   FB-974 ITEM 11

PARTS 17C-516H            GP=   012201 NO=01 LIFE=       SCREW CAP 5/16-18 UNC, /IN LG.
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,955
 D          S OHR   A     T S E E T Q A C   G  CD     CH      MH    M DT                                          E
 A          H DON   C     A / C C M A M S   R  OL     LO      AO    E IT                                          P
 T          F OUD   T     S U H H *   T F   F  NY     OU      NU    N AM                                          R
 E          T MPS   N     K     R S            T      CR      R       GE                                          S
                                                      KS                  DESCRIPTION

 38/03/78   266.2 038.0K U C C A   Y N 1802          0.1    0.1 1        REPLACED BOLT WINDSHIELD MOUNTING       974
                                                                      BRACKET. EPR FB-974 ITEM 12

 PARTS 17C-616H           GP=    011802 NO=01 LIFE=        CAP SCREW
       27E-6H                    011802    01              WASHER

 28/03/78   266.2 038.0L U O O A   N N 0401          0.1    0.1 1        TIGHTENED EXHAUST PIPE CLAMPS AT        974
                                                                      TURBOCHARGER AND MUFFLER. EPR FB-974
                                                                      ITEM 13

 28/03/78   266.2 038.0M U O O A   N N 0304          0.1    0.1 1        CLEANED PAINT OFF AIRCLEANER INDICATOR. 974
                                                                      PAINTED OVER WHEN SPOT PAINTED. EPR
                                                                      FB-974 ITEM 14

 28/03/78   266.2 038.0N U C C A   N N 2406          0.2    0.2 1        TIGHTENED HYDRAULIC FITTING AT MANIFOLD 974
                                                                      EPR FB-974 ITEM 15

 28/03/78   266.2 038.00 U O O A   Y N 0613          0.2    0.2 1        RETAPED MAIN WIRING HARNESS. EPR FB-974 974
                                                                      ITEM 16

 28/03/78   266.2 038.0P U O O A   Y Y 0613          0.2    0.2 1        TIGHTENED SENDING UNIT IN TRANSMISSION  974
                                                                      EPR FB-974 ITEM 17

 29/03/78   266.2 039.0  U O O A   Y Y 0306          0.2    0.2 1        TIGHTENED ELECTRICAL CONNECTIONS ON     974
                                                                      FUEL SHUTDOWN VALVE EFR FB-974

 29/03/78   266.2 039.0A U O O A   Y Y 0613          0.5    0.5 1   0.2 REPLACED SPEEDOMETER PULSE GENERATOR.    978
                                                                      EPR FB-978

 PARTS 6469711            GP=000010613 NO=01 LIFE=         GENERATOR ASSY

 29/03/78   266.2 039.0B U F F A   Y Y 0302          6.0   12.0 2   0.2 REPLACED LEAKING FUEL PUMP EPR FB-981     981
CRITICALITY FACTOR= 1.00

 PARTS 204161             GP=    010302 NO=01 LIFE=        PUMP, FUEL

 29/03/78   266.2 039.0C U O O A   Y Y 2202          0.3    0.3 1        DRIVERS WINDSHIELD WIPER ASSY REPLACED  979
                                                                      WITH WIPER ASSY FROM PASSENGER
                                                                      WINDSHIELD EPR FB-979
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,955
 D         S OHR   A      T S E E T Q A C   G  CD     CH    MH    M OT                                E
 A         H DON   C      A / C C M A M S   R  OL     LO    AO    E IT                                P
 T         F OUD   T      S U H H '   T F   P  NY     OU    NU    N AM                                R
 E         T MHS   N      K     R S            T      CR    R       GE                                S
                                                      KS                 DESCRIPTION

 29/03/78    266.2 039.00 U F O A    Y Y 1414         0.3   0.3 1      INSTALLED SEAL REPAIR KIT IN STEERING    980
                                                                     CONTROL VALVE. EPR FB-980

 PARTS 996330             GP=    011414 NO=01 LIFE=  202 KIT, REPAIR

 10/04/78 0 266.2 040.0  U F F A C Y Y 0105         12.0  36.0 3      REMOVE, INSTALL NEW ENGINE REAR SEAL,    984
                                                                     AND REINSTALL ENGINE PLUS TRANSVERTER
                                                                     ONVEHICLE EPR FB-984
CRITICALITY FACTOR= 1.00

 PARTS 551515-N           GP=000010105 NO=01 LIFE=      SEAL, CRANKSHAFT
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,956
 D         S OHR   A     T S F E T Q A C   G  CD     CH     MH     M UT                                        E
 A         H DON   C     A / C C M A M S   R  OL     LO     AO     E IT                                        P
 T         F OUD   T     S U H H '   T F   P  NY     OU     NU     N AM                                        R
 E         T MRS   N     K     R S            T      CR      R       GE                                        S
                                                     KS                       DESCRIPTION
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08/12/77 1 056.7 001.0  S C C A M Y N 0000  00.0  00.8  01.6 2  00.0 PERFORMED 50 HOUR MAINTANCE EPR FB-508    508

10/12/77 2 077.8 002.0  U C C A M Y N 7448  00.0  00.3  00.6 2  00.0 TURNED LEFT AND RIGHT HAND CUTTING        758
                                                                     EDGES EPR FB-758

12/12/77 2 089.5 003.0  U O O I M Y Y 2406  00.0  08.3  08.3 1  00.0 FABRICATED AND REPLACED THE STEEL LINE    467
                                                                     ON HYDROSTATIC PUMP 3 TIMES. REPLACED
                                                                     STEEL LINE WITH A HOSE EPR FB-467
CRITICALITY FACTOR= 0.50
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 PARTS UNKNOWN               GP=000052406 NO=01 LIFE=UNK   HOSE, HYDRAULIC

 14/12/77 1 091.3 004.0  S O O A M Y N 7448  00.0  00.5  01.0 2  00.0 REPLACED LEFT AND RIGHT HAND CUTTING     509
                                                                     EDGES EPR FB-509

 PARTS 2544958               GP=000057448 NO=02 LIFE=UNK   END BITS
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 16/12/77 1 093.7 005.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 15 GALLONS HYDRAULIC FLUID TO
                                                                     SCRAPER HYDRAULIC RESERVIOR.

 16/12/77 1 093.8 006.0  U C C A M Y N 0609  00.0  00.2  00.2 1  00.1 REPLACED FAULTY ROADSIDE TAIL LIGHT      494
                                                                     LAMP EPR FB-494

 PARTS MS35478-1883          GP=000050609 NO=01 LIFE= UNK  LAMP, INCANDESCENT ROADSIDE COMPOSITE LIGH

 16/12/77 2 097.4 007.0  U H O A M Y Y 2401  00.0  00.2  00.2 1  00.0 REPLACED CAPSCREW IN HYDRAULIC PUMP      464
                                                                     ASSEMBLY EPR FB-464
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 PARTS UNKNOWN               GP=000052401 NO=01 LIFE=097.4 SCREW,CAP 1/4 INCH

 19/12/77 2 098.7 008.0  U O O A M Y Y 2401  00.0  00.2  00.2 1  00.0 RECONNECTED HOSE ON HYDRAULIC PUMP       465
                                                                     ACTUATOR EPR FB-465

 17/12/77 1 101.2 009.0  U O O A M Y Y 2401  00.0  00.5  01.0 2  04.0 HYDRAULIC PUMP ACTUATOR ADJUSTMENT       480
                                                                     SCREW ADJUSTED. EPR FB-480

 21/12/77 1 108.9 010.0  S C C A M Y N 0000  00.0  00.9  02.7 3  00.0 50HR, 1 MAN TO REMOVE DRIVE SHAFT        485
                                                                     .25HR, 3 MEN TO UNCOUPLE .50HR,3 MEN TO
                                                                     PERFORM MAINTENANCE AND RECOUPLE 50
                                                                     HOUR MAINTENANCE. EPR FB-485
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,956
 D         S OHR    A      T S E E T Q A C   G  CD      CH      MH     M OT                                                    E
 A         H DON    C      A / C C M A M S   R  OL      LO      AO     E IT                                                    P
 T         F OUD    T      S U H H '   T F   P  NY      OU      NU     N AM                                                    R
 E         T MRS    N      K     R S            T       CR      R        GE                                                    S
                                                        KS                      DESCRIPTION

 27/01/78 1 147.5 011.0  U O O I M Y Y 0801  00.0  00.6  01.0 2  00.1 TIGHTENED ROTATING UNION ON REDUCTION       616
                                                                          BOX CLUTCH CONTROL EPR FB-616

 28/01/78 1 156.8 012.0  S O C A M Y N 7448  00.0  00.6  01.2 2  00.1 REMOVED AND ROTATED CUTTING EDGES AND       628
                                                                          REINSTALLED. REPLACED 7 BOLTS IN CENTER
                                                                          SECTION OF CUTTING EDGE. EPR FB-628

 PARTS 513450            GP=000057448 NO=07 LIFE= UNK  BOLT ASSY CUTTING EDGE

 30/01/78 1 163.1 012.1  U O O I M Y Y 2406  00.0  00.8  01.6 2  00.1 REPLACED HOSE FITTING, HYDRAULIC DUMP       644
                                                                          BY PASS HOSE. NOTED: PART NOT LISTED IN
                                                                          TM EPR FB-644

 PARTS 2548158           GP=000052406 NO=01 LIFE= 71.4 HOSE FITTING 90D HYDRAULIC PUMP BY PASS

 30/01/78 2 163.3 013.0  S C C A M Y N 0000  00.0  00.3  00.7 3  00.0 PERFORMED 50 HOUR MAINTENANCE EPR           631
                                                                          FB-631

 31/01/78 2 176.0 014.0  U F F A C Y Y 7448  00.0  04.7  08.7 3  00.0 REMOVED EJECTOR ASSEMBLY REWELDED           621
                                                                          ROLLER RETAINER AND SUPPORT ARM
                                                                          REASSEMBLED EJECTOR ASSEMBLY EPR FB-621
CRITICALITY FACTOR= 1.00

 22/02/78 2 180.1 015.0  U O O A C N N 2401  00.0  02.4  02.8 2  00.0 INSTALL CLARK MODIFICATION TO PROVIDE A    775
                                                                          (5) FIVE SECOND DELAY TO PROTECT THE
                                                                          HYDROSTATIC DRIVE EPR FB-775

 23/02/78 1 180.1 016.0  U F F I C N N 2401  0112  02.7  02.7 1  00.0 INSTALLED TWO 1/2 INCH PIPE PLUGS IN       780
                                                                          HYDROSTATIC MOTOR DRILLED TWO 45/64
                                                                          HOLES AND TAPPED FOR 1/2 INCH PIPE
                                                                          THREADS REFILLED MOTOR WITH OE-10 OIL
                                                                          REPLACED HYDROSTATIC DRIVE FILTER EPR
                                                                          FB-780

 PARTS 1566344           GP=000052401 NO=02 LIFE=UNK   PLUGS, PIPE 1/2 INCH, MAGNETIZED
                             000052401                 OIL, OE 10 (6 QUARTS)
       HC9600FUF8H           000052406    01     050.1 CARTRIDGE

 23/02/78 1 180.1  16.0A U F F A C N N 2406  00.0  00.4  00.4 1  00.0 INSTALLED RETROFIT LINES ON HYDROSTATIC     467(S-1)
                                                                          PUMP EPR FB-467(S-1)

 PARTS UNKNOWN           GP=000052406 NO=02 LIFE=      HYDRAULIC LINE
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,956
 O         S OHR   A     T S E E T Q A C   G  CO     CH     MH    M OT                                        E
 A         H OON   C     A / C C M A M S   R  OL     LO     AO    E IT                                        P
 T         F OUD   T     S U H H *   T F   P  NY     OU     NU    N AM                                        R
 L         T MFS   N     K     R S            T      CR     R       GE                                        S
                                                     KS                      DESCRIPTION

 07/03/78 1 182.6  16.1  U F F I C Y Y 2401          3.5    6.5 2   6.0 REPLACED HYDRAULIC PUMP ACTUATOR (SOLID  1094
                                                                         STATE RELAY BOX MOUNTED ON
                                                                         HYDROSTATICPUMP. EPR FB-1094

 PARTS SA1205-03-00         GP=000052401 NO=01 LIFE=182.6 ACTUATOR, HYDRAULIC PUMP
CRITICALITY FACTOR= 1.00

 13/03/78 1 198.5 017.0  S C C A M Y N 0000  00.0  00.2   00.4 2  00.0 PERFORMED 50 HOUR MAINTENANCE EPR         865
                                                                         FB-865

 13/03/78 1 198.5 017.0A S C C A M Y N 7448  00.0  01.3   02.6 2  00.0 REPLACED LEFT, RIGHT, AND CENTER           866
                                                                         CUTTING EDGES EPR FB-866

 PARTS 2548784              GP=000057448 NO=01 LIFE=041.7 CUTTING EDGE, LEFT HAND
       2548783                 000057448    01      041.7 CUTTING EDGE, RIGHT HAND
       2548786                 000057448    01      041.7 CUTTING EDGE, CENTER

 15/03/78 2 221.1 018.0  U F F A M Y Y 1501  00.0  00.4   01.6 4  00.0 HEAT + BEND TORN SECTION OF BOWL ON       883
                                                                         SCAPER EPR FB-883
CRITICALITY FACTOR= 1.00

 16/03/78 1 227.7 019.0  U O O A M Y N 0000  00.0  00.2   00.2 1  00.0 ADDED 8 1/2GALLONS HYDRAULIC OIL

 17/03/78 1 228.1 020.0  U O O A M Y Y 2408  00.0  01.0   02.0 2  00.1 REMOVE HYDRAULIC FITTING INSTALL NEW O    879
                                                                         RING REINSTALL FITTING ON MANIFOLD.
                                                                         PART NO. NOT AVAILABLE EPR FB-879

 20/03/78 1 251.0 021.0  S C C A M Y N 0000  00.0  00.5   01.0 2  00.0 COMPLETED 250 HOUR MAINTENANCE. EPR       889
                                                                         FB-889

 PARTS 569022-03            GP=000050801 NO=01 LIFE=      VENT ASSY, BREATHER, REDUCTION BOX
       569022-03               000051000    01            VENT ASSY, BREATHER, AXLE
       AC43887                 000051204    01            FILTER ELEMENT, FL, POWER CLUSTER

 24/03/78 1 254.2  21.1  U F F A C Y N 1501  00.0   0.6    0.6 1  00.0 GROUND DOWN TEAR ON SCRAPER BOWL AND      883(S-1)
                                                                         WELDED BEAD ALONG THE SEPARATION EPR
                                                                         FB-883(S-1)

 24/03/78 1 254.5 022.0  U O O A M Y N 0609  00.0  00.2   00.2 1  00.0 REPLACED ROADSIDE TAIL LIGHT EPR FB-907   907

 PARTS MS35478-1683         GP=000050609 NO=01 LIFE=      LAMP, INCANDESCENT
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,956
 D        S OHR   A     T S E E T Q A C    G  CD     CH     MH     M DT                                           E
 A        H DON   C     A / C C M A M S    R  OL     LO     AO     E IT                                           P
 T        F OUD   T     S U H H *   T F    P  NY     OU     NU     N AM                                           R
 E        T MRS   N     K     R S             T      CR      R       GE                                           S
                                                     KS                      DESCRIPTION

 24/03/78 1 254.5  22.1  U O O A M Y N 0608          0.3   0.3 1         REPLACED CURBSIDE COMPOSITE LIGHT. EPR    877,877(S-1)
                                                                       FB-877,877(S-1)

 PARTS 11614157           GP=000050608 NO=01 LIFE=       COMPOSITE LIGHT, CURBSIDE REAR

 24/03/78 1 254.5  22.20 U O O A   Y Y 0900          1.0   1.0 1         REPLACED PROP SHAFT UNIVERSAL JOINT.      888
                                                                       EPR FB-888

 PARTS 114-4143A          GP=000050900 NO=01 LIFE=251.0 PROPSHAFT UNIVERSAL JOINT

 28/03/78 1 266.0 023.0  U O O A M Y Y 2407          1.0   2.0 2         REPLACED EJECTOR CYLINDER. EPR FB-957     957

 PARTS 2545323            GP=000052407 NO=01 LIFE=       EJECTOR EYLINDER

 28/03/78   266.0 023.0A U C C A   N N 1501          0.1   0.1 1         TIGHTEN OIL COOLER COVER MOUNTING         959
                                                                       SCREW. EPR FB-959

 28/03/78   266.0 023.0B U F F A   Y Y 0801          2.0   2.0 1         REPLACED REDUCTION GEAR BOX CLUTCH        960
                                                                       COVER GASKET. EPR FB-960
CRITICALITY FACTOR= 1.00

 PARTS SK-67597           GP=   051801 NO=01 LIFE=       GASKET, CLUTCH COVER

 28/03/78     266  23.0C U O O A   Y N 7448        0.6   0.6             REWELDED EJECTOR CYLINDER MOUNT TO        933
                                                                       EJECTOR APRON. EPR FB-933

 28/03/78     266  23.0D U O O A   Y Y 7448      0 0.6   0.61            RE-WELDED EJECTOR ROLLER MOUNT            958(621-1)
                                                                       (ROADSIDE) TO EJECTOR APROR ARM. EPR
                                                                       FB-958(621-1)
CRITICALITY FACTOR= 1.00
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,957
 D          S OHR   A     T S E E T Q A C   G  CO    CH     MH    M DT                                  E
 A          H DON   C     A / C C H A M S   R  OL    LO     AO    E IT                                  P
 T          F OUD   T     S U H H '   T F   P  NY    OU     NU    N AM                                  R
 E          T MRS   N     K     R S            T     CR      R     GE                                   S
                                                     KS                  DESCRIPTION

29/11/77 2 010.3 001.0  U O O A M N N 0000  00.0  00.6  01.2 2  00.0 INSTALL ROPS EPR FB-680            680

28/11/77 2 010.3 001.0A U O O A M N N 0000  00.0  00.2  00.4 2  00.0 INSTALL WINDSHIELD ASSY EPR FB-680  680

28/11/77 2 010.3 001.0B U O O A M N N 0000  00.0  01.4  04.2 3  00.0 INSTALL CAB FRAME + CANVAS COVER EPR 680
                                                                      FB-680

03/12/77 1 012.5 002.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.1 ADDED 1 GALL/M ANTI-FREEZE MIX TO
                                                                      COOLING SYSTEM

03/12/77 1 016.0 003.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED (1) ONE GALLON OE-10 TO
                                                                      TRANSMISSION SUMP

03/12/77 1 016.3 003.0A U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GAL. OF TRANSMISSION FLUID.

03/12/77 1 016.3 003.0B U C C A M N N 0000  00.0  00.1   0.1 1  00.0 ADDED 1 GAL. ENGINE OIL.

05/12/77 2 024.1 004.0  U O O A M N N 0000  00.0  01.1  02.2 2  00.0 DISASSEMBLE FOR SHIPMENT TO NATICK FOR 752
                                                                      AIR DROP REMOVE ROPS 2MENX.3HRS=.6HRS
                                                                      REMOVE CAB + CANVAS COVER
                                                                      2MENX.4HRS=.8HRS REMOVE WINDSHIELD ASSY
                                                                      + FASSTEN ONHOOD 2MENX.4HRS=.8HRS EPR
                                                                      FB-752

17/01/78 1 026.6 005.0  U O O A C N N 0306  00.0  00.4  00.7 2  00.0 DISCONNECTED FUEL LINES AT FILTERS,     551
                                                                      BLEW OUT LINES WITH AIR, AND
                                                                      REASSEMBLED EPR FB-551

17/01/78 1 026.6 005.0A U O O A C N N 0309  00.0  00.3  00.3 1  00.0 REPLACED SECONDARY FUEL FILTERS CEANED 551
                                                                      PRIMARY FUEL FILTER EPR FB-551

PARTS 5678            GP=000010309 NO=02 LIFE=UNO   CARTRIDGE, FUEL

23/01/78 1 027.1 006.0  U F F A C Y Y 0302  00.0  00.9  01.5 2  00.0 TIGHTENED NUT ON THE GOVERNOR         552(S-1)
                                                                      ADJUSTMENT ROD AND ADJUSTED ENGINE
                                                                      SPEED EPR FB-552(S-1)
CRITICALITY FACTOR= 1.00

23/01/78 2 027.5 007.0  U O O A C N N 0000  00.0  01.7  01.9 3  00.0 RE-MOUNT WINDSHIELD ASSEMBLY, CAB FRAME 596
                                                                      AND ROPS EPR FB-596
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMEGE1 TEST ITEM ,952
D          S OHR    A     T S E E T Q A C    G   CO     CH     MH     M OT                                          E
A          H DON    C     A / C C M A M S    R   OL     LO     AO     E IT                                          P
T          F OUO    T     S U H H '   T F    P   NY     OU     NU     N AM                                          R
E          T MRS    N     K     R S              T      CR     R        GE                                          S
                                                        KS                  DESCRIPTION

29/01/78 1 031.2 008.0   U C C A M N N 0000  00.0   00.1    0.1 1  00.0 ADDED 5 GALS OF HYDRAULIC FLUID.

01/02/78 1 041.6 009.0   U O C A M N N 0000  00.0   00.1   00.1 1  00.0 ADDED 2 GAL OF TRANSMISSION FLUID.

01/02/78 2 045.0 010.0   U O O A M Y N 0613  00.0   00.1   00.2 1  00.1 RECONNECTED WIRE TO COOLANT LEVEL            647
                                                                        INDICATOR EPR FB-647

01/02/78   047.3 011.0   S C C A M N N 0000  00.0   00.1   00.1 1  00.0 ADDED 2 GALLONS TRANSMISSION OIL

11/02/78 2 059.7 012.0   U C C A M Y N 0609  00.0   00.1   00.1 1  00.0 REPLACE BURNED OUT CURBSIDE FLOODLIGHT       728
                                                                        LAMP EPR FB-728

PARTS 4578                GP=000010609 NO=01 LIFE=       LAMP, FLOODLIGHT )

15/02/78 1 069.6 013.0   U C C A M Y N 0000  00.0   00.2   00.4 1  00.1 TIGHTENED BOLTS IN THE VARIABLE              745
                                                                        DISPLACEMENT STEERING PUMP EPR FB-745

18/02/78 1 107.3 014.0   S C C A M Y N 0000  00.0   00.6   01.2 2  00.0 PERFORMED 50 HOUR MAINTENANCE ADDED 12       744
                                                                        ML OE10 TO MIDMOUNT BEARING EPR FB-744

18/02/78 1 109.7 015.0   U C C A M N N 0000  00.0   00.1   00.1 1  00.0 ADDED 1 GALLON TRANSMISSION OIL

18/02/78 2 114.8 016.0   U C C A M N N 0000  00.0   00.2   00.2 1  00.0 ADDED 2.5 GALLONS OF HYDRAULIC OIL

21/02/78 1 115.2 017.0   U O O A M Y Y 0608  00.0   00.3   00.3 1  00.0 TIGHTENED DIRECTIONAL CONTROL SWITCH         778
                                                                        MOUNTING BOLTS EPR FB-778

21/02/78 2 123.8 018.0   U C C A M N N 0000  00.0   00.1   00.1 1  00.0 ADDED 2 GALLONS ENGINE OIL

23/02/78 2 136.5 019.0   U C C A M N N 0000  00.0   00.1   00.1 1  00.0 ADDED 1 GALLON HYDRAULIC OIL

23/02/78 2 136.5 019.0A  U C C A M N N 0000  00.0   00.1   00.1 1  00.0 ADDED 1 GALLON TRANSMISSION OIL

23/02/78 2 136.5 019.0B  U C C A M N N 0000  00.0   00.1   00.1 1  00.0 ADDED 2 QUARTS ENGINE OIL

24/02/78 2 146.3 020.0   U C C A M N N 0000  00.0   0. 1   00.1 1  00.0 ADDED 1 GALLON TRANSMISSION OIL

24/02/78 2 146.3 020.0A  U C C A M N N 0000  00.0   00.1   00.1 1  00.0 ADDED 2 QUARTS ENGINE OIL

25/02/78 2 157.2 021.0   U C C A M N N 0000  00.0   00.1   00.1 1  00.0 ADDED 1 QUART ENGINE OIL
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,957
 D          S OHR    A      T S E E T Q A C    G  CD     CH     MH     M DT                                        E
 A          H DON    C      A / C C M A M S    R  CL     LO     AO     E IT                                        P
 T          F OUD    T      S U H H '   T F    P  NY     OU     NU     N AM                                        R
 E          T MRS    N      K     R S             T      CR     R        GE                                        S
                                                         KS                    DESCRIPTION

25/02/78 2 157.2 021.0A U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 2 QUARTS HYDRAULIC OIL

27/02/78 1 159.0 022.0  S O O A M Y N 2400  00.0  00.7  01.2 2  00.0 PERFORMED INSPECTION ON HYDRAULIC         804
                                                                     SYSTEM EPR FB-804

04/03/78 2 164.1 023.0  S C C A M Y N       00.0  00.4  01.2 3  00.0 PERFORMED 50 HR MAINTENANCE EPR FB-834   834

04/03/78 1 164.1 023.0A U C C A M Y N 0000  00.0  00.2  00.2 1  00.0 ADDED 10 GALLONS OF OIL TC HYDRAULIC      836
                                                                     SYSTEM OIL LOST DURING PUMP REPAIR EPR
                                                                     FB-836

06/03/78 2 167.1 024.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 1.5 GALLONS OF HYDRAULIC OIL

08/03/78 1 180.7 025.0  U F F A C N N 2407  00.0  00.7  00.7 1  00.1 ADJUST DOLLY WHEEL HYDRAULIC SYSTEM       872
                                                                     PRESSURE TO 2100 EPR FB-872

08/03/78 1 180.7 025.0A U F F A C Y Y 1400  00.0  00.3  00.3 1  00.1 CHECK STEER SYSTEM PRESSURE, AND ADJUST   861
                                                                     PRESSURE TO RECOMMENDED 2500 FSI EPR
                                                                     FB-861
CRITICALITY FACTOR= 1.00

10/03/78 1 180.7 026.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.1 ADDED 2 GALS OF FLUID TO HYDRAULIC
                                                                     RESERVOIR

11/03/78 1 193.5 027.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 4 QUARTS OF ENGINE CIL

11/03/78 1 193.5 027.0A U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 16 QUARTS OF HYDRAULIC OIL

13/03/78 1 207.5 028.0  S C C A M Y N 0000  00.0  00.5  00.9 3  00.0 PERFORMED 50 HOUR MAINTENANCE ADDED 43    856
                                                                     ML OF OIL TO MIDMOUNT EPR FB-856

14/03/78 1 218.8 029.0  U C C A M Y N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GALLON TRANSMISSION OIL

22/03/78 1 247.3 030.0  S O O A M N N 0000  00.0  00.5  01.8 4  00.0 REMOVED ROPS, CANVAS, CAB AND             887
                                                                     WINDSHIELD EPR FB-887

24/03/78 1 248.0 031.0  U C C A M Y N 0609  00.0  00.2  00.2 1  00.1 REPLACED INCANDESCENT LAMP, ROADSIDE,     901
                                                                     CMPT FRONT LIGHT EPR FB-901

PARTS MS3478-1663       GP=   010609 NO=01 LIFE= UNK  LAMP INCANDESCENT, CMPT FRONT LIGHT, ROAD- SIDE
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,967
 D         S OHR    A      T S E E T Q A C   G  CO     CH     MH     H OT                                        E
 A         H DON    C      A / C C M A M S   R  OL     LO     AO     E IT                                        P
 T         F OUD    T      S U H H *   T F   P  NY     OU     NU     N AM                                        R
 E         T MRS    N      K     R S             T     CR      R       GE                                        S
                                                       KS                     DESCRIPTION

24/03/78 1 248.0 031.0A U C C A M N N 0000  00.0  00.3  00.3 1  00.0 ADDED 2 GALLONS LUBRICANT TO FRONT
                                                                     DIFFERENTIAL.

04/04/78   250.0 032.0  U H F A  Y Y 1102         0.9   1.8 2        REPLACE DIFFERENTIAL SEAL EPR FB-966       966
CRITICALITY FACTOR= 1.00

 PARTS 28693             GP=000011102 NO=01 LIFE=       SEAL DIFFERENTIAL IMPUT

 04/04/78   250.0 032.0A U C C A   N N 0708         0.1   0.1 1        TIGHTEN HYDRAULIC LINE AT TORQUE           967
                                                                     CONVERTER EPR FB-967

 04/04/78   250.0 032.0B U C C A   N N 2406         0.1   0.1 1        TIGHTENED GLOBE VALVE PACKING RETAINER.    967
                                                                     EPR FB-967

 04/04/78   250.0 032.0C U C C A   Y N 2406         0.1   0.1 1        TIGHTEN FITTING ON LOWER HYDRAULIC LINE    967
                                                                     AT DOLLY WHEEL CYLINDER EPR FB-967

 04/04/78   250.0 032.0D U C C A   N N 0612         1.0   1.0 1        REMOVED BATTERIES; CLEANED AND SERVICED    967
                                                                     BATTERIES + BOX; REPLACED BATTERIES EPR
                                                                     FB-967

 04/04/78   250.0 032.0E U O O A   N N 0612         0.2   0.2 1        REMOUNTED BATTERY CABLES. CABLES           967
                                                                     IMPROPERLY MOUNTED. EPR FB-967

 04/04/78   250.0 032.0F U O O A   Y N 1410         0.1   0.1 1        REPLACED STEERING COLUMN MOUNTING BOLT.    967
                                                                     EPR FB-967

 PARTS 17C-688H          GP=000011410 NO=01 LIFE=  250 SCREW, CAP
       27E-6H               000011410    01        250 WASHER, FLAT

 04/04/78   250.0 032.0G U C C A   Y N 2406         0.1   0.1 1        TIGHTENED FITTING ON HYDRAULIC LINE AT     967
                                                                     LOCKING RING CYLINDER. EPR FB-967

 04/04/78   250.0 032.0H U O O A   N N 2202         0.2   0.2 1        CLEANED WINDSHIELD WIPER MOTOR FILTER.     967
                                                                     EPR FB-967

 04/04/78   250.0 032.0I U O O A   N N 0108         0.5   0.5 1        TIGHTENED TURBOCHARGER MOUNTING BOLTS      967
                                                                     ON THE EXHAUST MANIFOLD. EPR FB-967
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,958
 D        S OHR    A      T S F E T Q A C   G  CD     CH     MH     M OT                                    E
 A        H DON    C      A / C C M A M S   R  OL     LO     AO     E IT                                    P
 T        F OUD    T      S U H H '   T F   P  NY     OU     NU     N AM                                    R
 E        T HRS    N      K     R S            T      CR     R        GE                                    S
                                                      KS                    DESCRIPTION

30/11/77 2 011.4 001.0  S O O A M N N 7471  00.0  00.1  00.1 1  00.0 TIGHTENED 4 BOLTS IN RIGHT HAND SPRAY    751
                                                                      VALVE ASSEMBLY EPR FB-751

15/02/78 2 075.0 002.0  U C C A M Y N 4316  00.0  00.1  00.1 1  00.0 TIGHTEN LOOSE AIR LINE FITTING EPR       738
                                                                      FB-738

18/02/78 1 107.3 003.0  S C C A M Y N 0000  00.0  00.4  00.8 2  00.0 PERFORMED 50 HOUR MAINTENANCE ADDED 9    744
                                                                      ML OE10 TO MIDMOUNT EPR FB-744

27/02/78 1 159.0 004.0  S C O A M Y N 2400  00.0  00.3  00.6 2  00.0 PERFORMED INSPECTION ON HYDRAULIC        804
                                                                      SYSTEM EPR FB-804

28/02/78 2 164.0 005.0  U F F A C Y Y 7471  00.0  03.5  05.9 2  00.0 REMOVE WATER PUMP-DISASSEMLE PUMP,       836
                                                                      INSTALL SEAL ,SPRING AND SLINGER.
                                                                      RE-ASSEMBLE PUMP AND REMOUNT IN TANK.
                                                                      EPR FB-836
CRITICALITY FACTOR= 1.00

 PARTS K11197             GP=000097471 NO=01 LIFE=16410 SEAL
       K11198                000097471    01      16410 SPRING
       K11199                000097471    01      16410 SLINGER

04/03/78 2 164.1 006.0  S C C A M N N 0000  00.0  00.2  00.6 3  00.0 PERFORMED 50 HOUR MAINTENANCE EPR        834
                                                                      FB-834

11/03/78 2 207.2 007.0  U O O A M Y Y 1311  00.0  00.8  02.4 3  00.0 REPLACED BLOWN CURBSIDE REAR TIRE EPR    854
                                                                      FB-854
CRITICALITY FACTOR= 1.00

 PARTS 2507913            GP=000091311 NO=01 LIFE=20712 TIRE, PNEUMATIC

13/03/78 1 207.5 008.0  S C C A M Y N 0000  00.0  00.4  00.6 3  00.0 PERFORMED 50 HOUR MAINTENANCE ADDED 90   856
                                                                      ML OF OIL TO MIDMOUNT EPR FB-856

21/03/78 1 247.7 009.0  U O O A M N N 0609  00.0  00.3  00.3 2  00.0 REPLACED BOTH REAR COMPOSITE LIGHTS EPR  816(S-1)
                                                                      FB-816(S-1)

 PARTS 11614157           GF=000090609 NO=02 LIFE=       LIGHT, COMPOSITE

23/03/78 1 247.9 010.0  U O O A M Y Y 7471  00.0  00.3  00.3 1  00.0 REPLACED CURBSIDE SPRAY HEAD EPR FB-839  839
CRITICALITY FACTOR= 0.50

 PARTS                    GF=000097471 NO=01 LIFE=UNK    SPRAY HEAD
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,958
 U        S OHR   A    T S E E T Q A C   G  CD    CH    MH    M OT                                       E
 A        H DON   C    A / C C M A M S   R  OL    LO    AO    E IT                                       P
 T        F OUD   T    S U H H *   T F   P  NY    OU    NU    N AM                                       R
 E        T HRS   N    K     R S            T     CR    R       GE                                         S
                                                  KS                   DESCRIPTION

04/04/78 0 251.0 011.0  U O O A M Y Y 2406         0.1   0.2 2      WELDED SMALL CRACK ON HYDRAULIC HOSE     932
                                                                  ADAPTER. EPR FB-932

04/04/78   251.0 011.0A U H H A  Y Y 2402          2.0   4.0 2  0.5 MACHINED 0.010" FROM PLUNGER COVERS ON   772(S-1)
                                                                  MAIN HYDRAULIC CONTROL VALVE AND
                                                                  REPLACED O-RING . EPR FB-772(S-1)
CRITICALITY FACTOR= 1.00

PARTS A848X35           GP=   092402 NO=02 LIFE=        PACKING PREFORMED
      A791X23                 092402    01              PACKING PREFORMED
      A791X27                 092402    01              PACKING PREFORMED

04/04/78 0 251.0  11.0B U C C A    N N 4316         0.1   0.1 1      TIGHTENED BOTH RIGHT AND LEFT SPRAY      934
                                                                  NOZZLES EPR FB-934

04/04/78   251.0 011.0C U C C A    N N 2402         0.1   0.1 1      TIGHTENED HYDRAULIC LINE COUPLING AT     934
                                                                  THE MANIFOLD. EPR FB-934
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,959
 D         S OHR   A    T S E E T Q A C   G  CO     CH     MH    M OT                                               L
 A         H DON   C    A / C C H A H S   R  OL     LO     AO    E IT                                               P
 T         F OUD   T    S U H H '   T F   P  NY     OU     NU    N AM                                               R
 E         T HRS   N    K     R S            T      CR     R      GE                                                S
                                                    KS                    DESCRIPTION

03/12/77 2 025.4 001.0  U O O A C N N 0000  00.0  00.3  00.6 2  00.0 INSTALLED CANVAS CAB COVER EPR FB-760      760

03/12/77 2 025.4 001.0A U O O A C N N 0000  00.0  00.8  01.6 2  00.0 INSTALLED ROPS EPR FB-760                  760

03/12/77 2 025.4 001.0B U O O A C N N 0000  00.0  00.6  01.2 2  00.0 INSTALLED CAB SUPPORTING STRUCTURE EPR     760
                                                                     FB-760

03/12/77 2 025.4 001.0C U O O A C N N 0000  00.0  00.3  00.3 2  00.0 INSTALLED WINDSHIELD ASSY EPR FB-760       760

09/12/77 1 028.0 002.0  U O O A M Y Y 1201  00.0  00.4  00.4 1  00.0 ADJUSTED PARKING BRAKE EPR FB-761          761

09/12/77 1 028.0 002.0A U C C A M N N 0000  00.0  00.2  00.2 1  00.0 DRAINED 2 GALS OF TRANSMISSION FLUID.

12/12/77 1 045.8 003.0  U C C A M N N 0300  00.0  00.9  00.9 1  00.5 MOVED TEST VEHICLE INTO HEATED BUILDING    569
                                                                     TO THAW FUEL LINES AND FILTERS. EPR
                                                                     FB-569

12/12/77 2 055.5 004.0  U O O A M Y Y 0312  00.0  05.5  07.7 2  00.9 REPLACED MISSING CLEVIS PIN + COTTER      762
                                                                     PIN IN THROTTLE SLAVE CYLINDER EPR
                                                                     FB-76
CRITICALITY FACTOR= 1.00

 PARTS 5-W-9              GP=000010312 NO=01 LIFE=      PIN, CLEVIS
       6-W-5                 000010312    01            PIN, COTTER

14/12/77 1 056.3 005.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 4 GAL OF ANTIFREEZE

14/12/77 1 056.5 006.0  S C C A M Y N 0000  00.0  00.2  00.4 2  00.0 PERFORMED 50 HR. MAINTENANCE EPR FB-764   764

15/12/77 1 064.6 007.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.1 ADDED 1 GALLON OE-10 TO TRANSMISSION
                                                                     RESERVOIR

15/12/77 1 064.6 007.0A U O O A M Y N 0721  00.0  00.5  00.5 1  00.2 REPLACED GASKET (PREFORMED PACKING) IN    451
                                                                     TRANSMISSION FILTER ASSY EPR FB-451

 PARTS 173368             GP=000010721 NO=01 LIFE=      PACKING, PREFORMED TRANSMISSION FILTER ASS

15/12/77 1 066.8 008.0  U O O A M Y Y 1100  00.0  02.5  02.5 1  02.0 REPLACED VENT ASSEMBLY BREATHER CHECK     452
                                                                     LUBRICANT LEVEL IN AXLE ASSEMBLY-NONE
                                                                     ADDED EPR FB-452

 PARTS 569022-03          GP=000011100 NO=01 LIFE=UNK   VENT ASSY BREATHER AXLE ASSY
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,959
 D          S OHR   A     T S E E T Q A C    G  CD     CH    MH    M OT                                   E
 A          H DON   C     A / C C M A M S    R  OL     LO    AO    E IT                                   P
 T          F CUD   T     S U H H '   T F    P  NY     OU    NU    N AM                                   R
 E          T MRS   N     K     R S             T      CR     R      GE                                   S
                                                       KS                  DESCRIPTION

15/12/77 2 075.2 009.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED .5 GALLON OF TRANSMISSION OIL

04/01/78 2 101.8 010.0  U F O A C N N 1501  00.0  00.5  00.5 1  00.0 WELD BROKEN TOP MOUNTING BRACKET ON     496
                                                                   HYDRAULIC TANK EPR FB-496

06/01/78 1 112.0 011.0  U F F A M Y Y 1410  00.0  00.3  00.3 1  00.2 INSTALLED COVER PLATE AND GASKET ON     527
                                                                   VARIABLE DISPLACEMENT STEER PUMP EPR
                                                                   FB-527
CRITICALITY FACTOR= 1.00

 PARTS UNK              GP=    011410 NO=01 LIFE=UNK   CUP BEARING, COVER PLATE, CURBSIDE REAR OF TRANSMISSION.

11/01/78 2 112.2 012.0  S C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 4 1/2 GALLONS HYDRAULIC OIL

13/01/78 7 128.8 013.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GALLON OF HYDRAULIC OIL

14/01/78 1 128.8 014.0  U C C A M N N 0000  40.0  00.1  00.1 1  00.0 ADDED 1 GAL OF ENGINE OIL.

14/01/78 1 128.8 014.0A U C C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 2 QTS OF TRANSMISSION FLUID.

14/01/78 1 128.8 014.0B U C C A M Y N 0609  00.0  00.1  00.1 1  00.0 REPLACED RIGHT HAND SERVICE HEADLIGHT   540(S-1)
                                                                   SEAL BEAM EPR FB-540(S-1)

 PARTS 4880             GP=000010609 NO=01 LIFE=UNK   LAMP, SEAL BEAM

04/01/78 1 132.6 015.0  U C C A M Y N 0106  00.0  00.1  00.1 1  00.0 REPAIRED OIL FILLER CAP EPR FB-545      545

18/01/78 1 138.6 016.0  S O O A M N N 0000  00.0  02.2  04.4 2  00.0 REMOVED ROPS, REMOVED CAB, MOUNTED      563
                                                                   WINDSHIELD ON HOOD IN PREPARATION FOR
                                                                   HUMP TEST EPR FB-563

19/01/78 1 138.6 017.0  U O O I M Y Y 1410  00.0  00.1  00.1 1  00.0 RESEALED BEARING CAP ON VARIABLE        527
                                                                   DISPLACEMENT PUMP EPR FB-527 (S-1)
CRITICALITY FACTOR= 1.00

04/02/78 2 143.8 018.0  U F F A C Y Y 1501  00.0  06.1  12.1 3  00.0 REPLACED BROKEN TOP MOUNTING BRACKET ON 645
                                                                   HYDRAULIC RESERVOIR WITH MODIFIED
                                                                   BRACKET 3/8" THICK EPR FB-645

CRITICALITY FACTOR= 1.00
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,959
 D          S OHR    A     T S E E T Q A C    G  CO     CH     MH    M DT                                     E
 A          H DON    C     A / C C M A M S    R  OL     LO     AO    E IT                                     P
 T          F OUD    T     S U H H '   T F    P  NY     OU     NU    N AM                                     R
 E          T HRS    N     K     R S             T      CR     R       GE                                     S
                                                        KS                DESCRIPTION

04/02/78 1 144.1 018.1  U O C A M N N 0000  00.0  00.9  01.8 2  00.0 SET UP WINDSHIELD AND REINSTALLED CAB,    709
                                                                   CANVAS AND SIDE VIEW MIRROR (THE ABOVE
                                                                   ITEMS HAD BEEN DISASSEMBLED AND
                                                                   REMOVED, WITH EXCEPTION OF THE
                                                                   WINDSHIELD), PRIOR TO PERFORMING THE
                                                                   RAILROAD IMPACT TEST.) EPR FB-709

04/02/78 2 154.8 018.2  S C C A M Y N 0000         0.6   1.2 2       PERFORMED 50 HOUR MAINTENANCE EPR      1111
                                                                   FB-1111

06/02/78 1 160.1 019.0  U C C A M N N 0000  00.0   0.1   0.1 1  00.0 ADDED 2 QTS OF ENGINE OIL.

06/02/78 2 162.3 020.0  U C C A M N N 0000  00.0  00.2  00.2 1  00.0 ADDED 1 GALLON OF HYDRAULIC OIL

07/02/78 1 162.5 020.1  U C C A M Y N 0312  00.0  00.5  00.5 2  00.0 OPERATED THROTTLE BY HAND AND USED       708
                                                                   ETHER TO START ENGINE EPR FB-708

09/02/78 1 188.0 021.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.1 ADDED 3 GALLONS OF HYDRAULIC FLUID

09/02/78 2 199.7 021.1  U O O A M Y N 2402  00.0  00.1  00.1 1  00.0 INSTALL NEW KNOB (CONNECT + DISCONNECT)  727
                                                                   EPR FB-727

10/02/78 1 199.7 022.0  U C C A M N N 0000  00.0  00.1  00.1 1  00.1 ADDED 3 GALLON HYDRAULIC FLUID TO
                                                                   RESERVOIR

10/02/78 1 199.7 022.0A U C C A M N N 0000  00.0  00.1  00.1 1  00.1 ADDED 1 GALLON OIL TO ENGINE

10/02/78 2 213.9 023.0  U O C A M N N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GAL. OF TRANSMISSION OIL.

11/02/78 1 213.7 023.1  S C C A M Y N 0000  00.0  00.5  00.7 2  00.0 PERFORMED 50 HR MAINTENANCE PER          735
                                                                   LO5-3840-201-12. ADDED 8 ML OF OIL TO
                                                                   THE MIDMOUNT BEARING. EPR FB-735

11/02/78 2 213.7 024.0  U O O A M Y N 0607  00.0  00.2  00.2 1  00.0 REPLACED BURNED OUT PANEL LAMP EPR       722
                                                                   FB-722

PARTS M4489               GP=000010607 NO=01 LIFE=UNK    LAMP PANEL

11/02/78 2 213.7 024.0A U O O A M Y Y 1201  00.0  00.1  00.2 2  00.0 ADJUSTED PARKING BRAKE EPR FB-721        723
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,959
 D        S OHR   A     T S E E T Q A C   G  CD     CH      MH     M DT                                          E
 A        H DON   C     A / C C M A M S   R  OL     LC      AO     E IT                                          P
 T        F OUD   T     S U H H '   T F   P  NY     OU      NU     N AM                                          R
 E        T MRS   N     K     R S             T     CR      R        GE                                          S
                                                    KS                      DESCRIPTION

 11/02/78 2 213.7 024.08 U O O A M Y Y 0613  00.0  00.9   00.9 1  00.0 REPLACED DEFECTIVE THERMO SWITH EPR       724
                                                                       FB-724

 PARTS 6402718          GP=000010613 NO=01 LIFE=          SWITCH,THERMO

 14/02/78 2 238.7 025.0  U C C A M Y N 0000  00.0  00.1   00.1 1  00.0 ADDED 3 QUARTS OF ENGINE CIL

 14/02/78 2 244.9 026.0  U C C A M Y N 0000 .00.2  00.2   00.2 1  00.0 ADDED 1.5 GALLONS OF TRANSMISSION OIL

 15/02/78 1 248.4  27.0  U C C A M Y N 0000  00.0  00.1   00.1 1  00.0 ADDED 1 1/2 GALLONS TRANSMISSION OIL

 15/02/78 2 255.3  27.1  S O O A M Y N 0000         0.9    1.8 2       250 HOUR MAINTENANCE. EPR FB-1110        1110

 PARTS MS-35802-3       GP=000010106 NO=02 LIFE=          FILTER ELEMENT, OIL, FULL FLOW
       9311                000010106    02                FILTER ELEMENT, OIL, BYPASS
       5678                000010309    02                CARTRIDGE, FUEL FILTER
       LF-511              000010721    01                FILTER ELEMENT, OIL, TRANSMISSION
       299080              000010508    01                FILTER ELEMENT, WATER, CORROSION RESIST
       AC43887             000011202    01                FILTER ELEMENT, FL, POWER CLUSTER
       569022-03           000010900    01                VENT ASSY, BREATHER, MDMT
       569022-03           000011100    01                VENT ASSY, BREATHER, AXLE
       569020-03           000010700    01                VENT ASSY, BREATHER, TRANSMISSION

 16/02/78 1 260.8 028.0  U C C A M N N 0000  00.0  00.1   00.1 1  00.0 ADDED 1 GALLON TRANSMISSION OIL

 17/02/78 1 273.5 029.0  U C C A M Y N 0000  00.0  00.1   00.1 1  00.0 ADDED 1 1/2 GALLONS OF TRANSMISSION OIL

 24/02/78 1 276.8 029.1  U F F A C Y Y 0710  64.0  14.9   31.4 3  00.0 REPLACED TRANSMISSION REAR COVER GASKET  771(S-1)
                                                                       ADDED 7 GALLONS TRANSMISSION OIL EPR
                                                                       FB-771(S-1)
CRITICALITY FACTOR= 1.00

 PARTS 231781           GP=000010700 NO=01 LIFE=          GASKET
       231054              0000107      01                GASKET
       232484              0000107      01                GASKET, BRG. CAP
       231193              0000107      01                GASKET
       25K040026           0000107      01                PACKING, PREFORMED
       25K030016           0000107      01                PACKING, PREFORMED
       208768              0000107      01                PISTON RING, CLR SOFT
       N/A                 0000107      01                OIL, TRANSMISSION (7 GALLONS)
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,959
 D         S OHR   A     T S E E T Q A C    G  CD     CH     MH     M OT                                          E
 A         H DON   C     A / C C M A M S    R  OL     LO     AO     E IT                                          P
 T         F OUD   T     S U H H '   T F    P  NY     OU     NU     N AM                                          R
 E         T MRS   N     K     R S             T      CR     R        GE                                          S
                                                      KS                   DESCRIPTION

 01/03/78 1 283.1 029.2  S F F A C N N 0710          0.4    0.4 1        RETORQUED TRANSMISSION END COVER CAP     1093
                                                                        SCREWS EPR FB-1093

 01/03/78 1 283.1 029.3A U O O A C Y Y 1501  00.0   00.8   01.2 2   00.3 ADJUSTED COUPLER CYLINDER LOCKING        868
                                                                        PRESSURE EPR FB-868

 02/03/78 1 291.2 030.0  U C C A M N N 0000  00.0   00.1   00.1 1   00.0 ADDED 1 GALLON OF OIL TO ENGINE SUMP.

 02/03/78 1 291.2 030.0A U C C A M Y N 0000  00.0   00.2   00.2 1   00.1 ADDED 4 GALLONS OF FLUID TO HYDRAULIC
                                                                        RESERVOIR

 04/03/78 2 293.6  30.1  S C C A M Y N 0000          0.5    1.0 2        PERFORMED 50 HOUR SERVICE. EPR FB-839     839

 06/03/78 1 297.6 034.0  U O O A M Y Y 2407  00.0   01.5   03.0 2   00.1 REMOVED DAMAGED DOLLY CYLINDER,           871
                                                                        INSTALLED NEW DOLLY CYLINDER. EPR
                                                                        FB-871

 PARTS 2508337            GP=   012407 NO=01 LIFE= UNK  DOLLY SYLINDER, DOLLY WHEEL SUSPENSION

 07/03/78 1 297.6 035.0  U F F A M Y Y 1311  00.0   00.5   01.0 2   00.0 REPLACED DOLLY WHEEL TIRE, TUBE AND       870
                                                                        WHEEL FLAP, CURBSIDE. EPR FB-870
CRITICALITY FACTOR= 1.00

 PARTS 18X9-8             GP=   011311 NO=01 LIFE= UNK  TIRE 18X9-8
       1794819                  011311    01       UNK  TUBE-DOLLY WHEEL
       1794820                  011311    01       UNK  FLAP-DOLLY WHEEL

 07/03/78 2 297.8 036.0  U C C A M Y N 1208  00.0   00.1   00.1 1   00.0 RE-TIGHTEN LOOSE HOSE FITTING ON MASTER  846
                                                                        CYLINDER EPR FB-846

 10/03/78 2 336.0 037.0  S C C A C N N 0000  00.0   00.1   00.1 1   00.0 ADDED 1 QUART OF ENGINE OIL

 11/03/78 1 346.3 038.0  U O O A M Y Y 1507  00.0   00.2   00.2 1   00.0 TIGHTENED DOLLY WHEEL RETAINING NUT TO    881
                                                                        REMOVE LOOSENESS EPR FB-881

 13/03/78 1 351.7 039.0  U O O A M Y Y 1203  00.2   00.8   00.8 2   00.0 ADJUSTED SERVICE BRAKES EPR FB-875        875

 13/03/78 1 351.7 039.0A S C C A M Y N 0000  C0.0   00.8   01.3 2   00.0 PERFORMED 50 HOUR MAINTENANCE EPR         855
                                                                        FB-855
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,959
 D         S OHR   A     T S E E T Q A C   G  CO    CH    MH    M OT                                        E
 A         H DON   C     A / C C M A M S   R  OL    LO    AO    E IT                                        P
 T         F OUD   T     S U H H '   T F   F  NY    OU    NU    N AM                                        R
 E         T HPS   N     K     R S             T    CK     R     GE                                         S
                                                    KS                DESCRIPTION

14/03/78 1 362.5 040.0   U C C A M Y N 0000  00.0  00.1  00.1 1  00.0 ADDED 1 GALLON TRANSMISSION OIL

20/03/78 1 400.0 041.0   S C C A M Y N 0000  00.0  00.4  00.8 2  00.0 50 HOUR SERVICE EPR FB-890             890

20/03/78 1 402.7 042.0   S C C A M N N 0000  00.0  00.5  01.0 2  00.0 REMOVED ROPS AND CAB IN PREP. FOR       891
                                                                     SHIPMENT EPR FB-891

05/04/78   407.0 043.0   U O O A   N N 1412         0.7   0.7 1       REPLACED HYDRAULIC STEERING CYLINDER.   937
                                                                     EPR FB-937

PARTS 2548108            GP=    011412 NO=01 LIFE=        CYLINDER, STEERING.

05/04/59   407.0 043.0A U O O A   N N 0401         0.1   0.1 1       TIGHTENED EXHAUST PIPE CLAMP AT         939
                                                                     TURBOCHARGER. EPR FB-939

05/04/78   407.0 043.0B U O O A   Y Y 0710         0.1   0.1 1       TIGHTENED BOLTS ON TRANSMISSION BEARING 939
                                                                     CAP. EPR FB-939

05/04/78   407.0 043.0C U C C A   Y Y 0700         0.1   0.1 1       TIGHTENED TRANSMISSION MOUNTING BOLT.   939
                                                                     EPR FB-939

05/04/78   407.0 043.0D U O O A   N N 1208         0.1   0.1 1       REPLACED HYDRAULIC BRAKELINE FITTING ON 939
                                                                     MASTER CYLINDER. FITTING HAD BEEN
                                                                     CROSS-THREADED AND WAS LEAKING BRAKE
                                                                     FLUID WHEN BRAKES WERE APPLIED. EPR
                                                                     FB-939

PARTS FC-2832            GP=000011208 NO=01 LIFE=        ADAPTER, BRAKE LINE.

05/04/78   407.0 043.0E U O O A   N N 0900         0.1   0.1 1       REPLACED MIDMOUNT BREATHER. EPR FB-939  939

PARTS 569022-03          GP=000010900 NO=01 LIFE=  152 VENT, BREATHER ASSY

05/04/78   407.0 043.0F U O O A   N N 0305         0.1   0.1 1       TIGHTENED OIL LINE FITTING ON           939
                                                                     TURBOCHARGER EPR FB-939

05/04/78   407.0 043.0G U C C A   Y N 0607         0.1   0.1 1       REPLACED BULB IN DASH LIGHT. EPR FB-939 939

PARTS 456                GP=    010607 NO=01 LIFE=  UNK LAMP, INCAND.
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,960
 D        S OHR   A     T S E E T Q A C   G  CD    CH     MH    M DT                                                   E
 A        H DON   C     A / C C M A M S   R  OL    LO     AO    E IT                                                   P
 T        F OUD   T     S U H H '   T F   P  NY    OU     NU    N AM                                                   R
 E        T HRS   N     K     R S            T     CR      R      GE                                                   S
                                                   KS                       DESCRIPTION
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14/12/77 1 056.5 001.0  S C C A M Y N 0000  00.0  00.1  00.2 2  00.0 PERFORMED 50 HR. MAINTENANCE EPR FB-764  764

11/01/78 2 112.2 002.0  S F F A C N N 0000  00.0  01.1  01.1 1  00.0 WELDED ABRACKET ON DUMPER BODY TO MOUNT  531
                                                                      BACK-UP ALARM EPR FB-531

14/01/78 1 128.8 003.0  S C C A M N N 0609  00.0  00.1  00.1 1  00.0 REPLACED BULB IN RIGHT HAND TAIL LIGHT
                                                                      EPR FB 541(S-1)

PARTS MS-35478-1688         GP=000080609 NO=01 LIFE=UNK    BULB, INCANDESANT

16/01/78 2 138.6   3.1  U O O A M Y N 0806  00.0   0.5   1.0 2  00.0 REPLACED BROKEN ROADSIDE TAIL LIGHT      573(S-1)
                                                                      ASSEMBLY. EPR FB-573(S-1)

PARTS 11614157              GP=000080609 NO=01 LIFE= 50.3 LIGHT, COMPOSITE

04/02/78 1 144.1 004.0  U C C A M N N 0800  00.0  00.2  00.4 2  00.0 SET UP ROCK GUARD, ROCK GUARD HAD BEEN   709
                                                                      LOWERED INTO STOWAGE POSITION DURING
                                                                      PERFORMANCE OF THE RAILROAD IMPACT
                                                                      TEST. EPR FB-709

04/02/78 2 154.8   4.1  S C C A M Y N 0000         0.3   0.3 1       COMPLETED 50 HOUR MAINTENANCE EPR       1111
                                                                      FB-1111

11/02/78 1 213.7 005.0  S C C A M Y N 0000  00.0  00.5  00.7 2  00.0 PERFORMED 50 HR MAINTENANCE PER          735
                                                                      L05-3840-208-12. ADDED 87 ML OF OIL TO
                                                                      THE MIDMOJNT BEARING. EPR FB-735

14/02/78 2 243.8 006.0  U O O A M Y Y 4318  00.0  00.2  00.2 1  00.0 TIGHTEN LOOSE NUT ON THE AIR CHAMBER     736
                                                                      ASSEMBLY EPR FB-736

15/02/78 2 255.3   6.1  S O O A M Y N 0000         0.4   0.4 1       250 HOUR MAINTENANCE. EPR FB-1110       1110

PARTS 569022-03             GP=000080900 NO=01 LIFE=       VENT ASSY, BREATHER, MIDMOUNT
      569022-03                000081000    01             VENT ASSY, BREATHER, AXLE
      AC43887                  000081204    01             FILTER ELEMENT, FL, POWER CLUSTER

17/02/78 2 267.7 007.0  U C C A M Y N 1801  00.0  00.1  00.1 1  00.0 SUBSTITUTE BROKEN QUICK RELEASE PIN      746
                                                                      WITH 1"X4" BOLT AND NUT EPR FB-746

04/03/78 2 293.6 008.0  S C C A M Y N 0000  00.0  00.5  01.0 2  00.0 COMPLETED 50 HOUR MAINTENANCE EPR        838
                                                                      FB-838
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,960
 D         S OHR   A      T S E E T Q A C    G  CD     CH     MH     M OT                                          E
 A         H DON   C      A / C C M A M S    R  OL     LO     AO     E IT                                          P
 T         F OUD   T      S U H H '   T F    P  NY     OU     NU     N AM                                          R
 E         T HRS   N      K     R S             T      CR      R       GE                                          S
                                                       KS                     DESCRIPTION

 13/03/78 1 351.7 009.0  S C C A M Y N 0000  00.0  00.7  01.2 2  00.0 PERFORMED 50 HOUR MAINTENANCE EPR        855
                                                                    FB-855

 16/03/78 1 380.6 010.0  U O O I M Y Y 1801  00.0  00.8  01.6 2  00.4 ADJUSTED TAILGATE LATCH ASSEMBLY EPR     884
                                                                    FB-884
CRITICALITY FACTOR= 0.50

 20/03/78 1 400.0 011.0  S C C A M Y N 0000  00.0  00.4  00.8 2  00.0 50 HOUR SERVICE EPR FB-890              890

 21/03/78 1 403.4 012.0  S O O A M Y N 0613  00.0  00.3  00.3 1  00.0 REPLACED SHELL ON ELECTRICAL CONNECTOR   882
                                                                    ON WIRING HARNESS EPR FB-882

 PARTS 8344537           GP=    080613 NO=01 LIFE= UNK  ELEC. CONNECTOR, SHELL WIRING HARNESS W.S.

 21/03/78 1 403.4 012.0A U O O A M Y N 0609  00.0  00.4  00.4 1  00.0 REPLACED ROADSIDE COMPOSITE REAR LIGHT.  893
                                                                    REPAIRED CURBSIDE COMPOSITE REAR LIGHT.
                                                                    EPR FB-893

 PARTS 11614157          GP=    080609 NO=01 LIFE= UNK  COMPOSITE REAR LIGHT

 24/03/78 1 404.7 013.0  U O O A M Y N 1801  00.0  00.3  00.3 1  00.1 REPLACED ROADSIDE ROCK GUARD CABLE EPR   910
                                                                    FB-910

 PARTS 2548333           GP=    081801 NO=01 LIFE=      CABLE ASSEMBLY, ROCK GUARD

 27/03/78 1 405.3  14.0  U O O A C Y Y 1801  00.0   0.2   0.2 1  00.0 REWELDED CABLE GUIDE BRACKET ON DUMPER   921
                                                                    BODY ASSY. EPR FB-921

 05/04/78   407.0 015.0  U O O A   N N 0900          0.1   0.1 1       REPLACED MIDMOUNT BEARING BREATHER. EPR 936
                                                                    FB-936

 PARTS 569022-03         GP=000010900 NO=01 LIFE=  147 VENT BREATHER

 05/04/78   407.0 015.0A U C C A   N N 0900          0.1   0.1 1       TIGHTENED MIDMOUNT BEARING FILLER PLUG.  936
                                                                    EPR FB-936

 18/04/78   407.0  16.0  U O O A   N N 1208          0.9   0.9 1       REPLACED HYDRAULIC-AIR POWER CLUSTER,    1029
                                                                    EPR FB-1029

 PARTS AC-39611          GP=000081208 NO=01 LIFE=      HYDAIR PWR CLUSTER
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AD-A068 978 ARMY MOBILITY EQUIPMENT RESEARCH AND DEVELOPMENT COMM--ETC F/G 13/3
FAMILY OF MILITARY ENGINEER CONSTRUCTION EQUIPMENT (FAMECE) PRO--ETC(U)
MAR 79 A B FOLLANSBEE, R T EILER, C W HASLE

UNCLASSIFIED MERADCOM-2269 NL

6 OF 6

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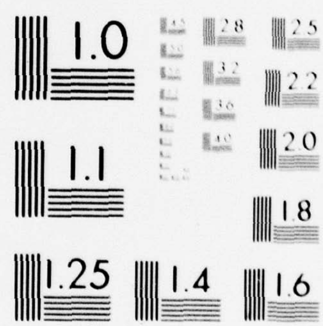

MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,966
D         S OHR   A     T S E E T Q A C   G  CO     CH     MH    M OT                                        E
A         H DON   C     A / C C M A M S   R  OL     LO     AO    E IT                                        P
T         F OUD   T     S U H H ' T F     P  NY     OU     NU    N AM                                        R
E         T MRS   N     K     R S            T      CR     R       GE                                        S
                                                    KS                   DESCRIPTION
-----------------------------------------------------------------------------------------------------------------

31/08/77 1 200.2 001.0  S C C A C Y N 0000          0.2    0.4 2      PERFORMED 50 HOUR MAINTENANCE CHECK AS  1089
                                                                   REQUIRED BY LUBE ORDER 1. CHECKED FLUID
                                                                   LEVEL IN MASTER CYLINDER LEVEL OK 2.
                                                                   ADDED 25ML OE/HDO TO MIDMOUNT BEARING
                                                                   3. ADDED GREASE TO ALL GREASE FITTINGS
                                                                   ON BUCKET. EPR FB-1089

27/08/77 1 220.6 001.1  U C C A C Y N 2403  00.0   00.1   00.1 1  00.0 STOPPED VEHICLE WHILE EARTH MOVING TO  1067
                                                                   TIGHTEN LOCK NUT ON BUCKET DUMP
                                                                   CONTROL. EPR FB-1067

01/09/77 1 223.2 002.0  U O O A C Y Y 0613  00.0   01.3   01.3 1  00.1 TIGHTENED LOOSE ELECTRICAL CONNECTION  97
                                                                   ON SOLENOID CONTROLLING ROLL BACK
                                                                   LEVER. EPR FB-97
CRITICALITY FACTOR= 0.25

01/09/77 2 223.2 003.0  U O O A C Y Y 1311  00.1   00.7   00.7 1  00.0 TORQUED 20 WHEEL LUG BOLTS- (3 WHEEL   55
                                                                   LUG BOLTS WERE ALL THE WAY OUT OF
                                                                   WHEEL.)EPR FB-55

06/09/77 1 248.2   3.1  S O O A C Y N 0000          1.0    1.0 1      250 HOUR MAINTENANCE. EPR FB-1090       1090

PARTS 569022-03              GP=000030900 NO=01 LIFE=      VENT ASSY, BREATHER, MIDMOUNT
      569022-03                 000031000    01            VENT ASSY, BREATHER, AXLE
      AC43887                   000031204    01            FILTER ELEMENT, FL, POWER CLUSTER

06/09/77 2 248.7 003.1B U O O I C N N 0609  00.0   00.5   00.5 1  00.0 REPAIRED ELECTRICAL PLUG FOR           102
                                                                   INTERCONNECTING ELECTRICAL SYSTEMS
                                                                   BETWEEN POWER SECTION AND LOADER WORK
                                                                   SECTION. EPR FB-102

13/09/77 1 302.9 004.0  U O O A C Y N 0000  00.0   00.5   01.0 2  00.0 50 HOUR MAINTENANCE ADDED 40 ML OIL TO 117
                                                                   MDMT BEARING. EPR FB-117

16/09/77 1 337.6 004.1  U O O A C Y Y 7437  00.0   00.5   01.0 2  00.0 REPLACED ALL BUCKET TEETH ASSEMBLIES    132
                                                                   EPR FB-132

PARTS 25278                  GP=000037437 NO=10 LIFE=  UNK TOOTH ASSY, BUCKET
      15713                     000037437    10        UNK SCREW, CAP, HEX HEAD
      15714                     000037437    10        UNK SCREW, CAP, HEX HEAD
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,966
 D        S OHR   A     T S E E T Q A C   G  CD    CH    MH    M DT                                    E
 A        H DON   C     A / C C M A M S   R  OL    LO    AO    E IT                                    P
 T        F OUD   T     S U H H '   T F   P  NY    CU    NU    N AM                                    R
 E        T MRS   N     K     R S            T     CR    K       GE                                    S
                                                   KS                  DESCRIPTION

22/09/77 2 366.4 005.0  U O O A C Y Y 2403  00.0  00.2  00.2 1  00.0 RE-THREAD END OF BUCKET BOOM CONTROL    164
                                                                     ROD BECAUSE THE CONTROL ROD BROKE
                                                                     REINSTALLED ON MACHINE EPR FB-164
23/09/77 1 374.9 006.0  U O C A M Y Y 2406  00.0  00.5  01.0 2  00.1 TIGHTENED HYDRAULIC MANIFOLD FITTING.   188
                                                                     EPR FB-188
24/09/77 1 388.7 007.0A U C C A M Y N 7437  00.0  00.2  00.2 1  00.0 REPLACE LUBRICATION FITTINGS IN BLADE   198
                                                                     AND CLAM ASSY HINGE PIN ON THE ROAD
                                                                     SIDE. EPR FB-198
PARTS 10H-26           GP=000037437 NO=01 LIFE=        FITTING, LUBRICATION ROADSIDE OF BUCKET AT HINGE
26/09/77 2 402.4 008.0  S C C A M Y N 0000  00.0  00.1  00.1 1  00.0 50 HOUR SERVICE. EPR FB-1045           1045
26/09/77 2 402.4 008.0A U D O A C N N 1601  00.0  00.5  00.5 1  00.0 RIGHT FRONT FENDER DENTED, CAUSING THE  169
                                                                     FENDER TO BE TORN FROM 2 OF ITS 4
                                                                     MOUNTING BOLTS THE TORN AREAS OF THE
                                                                     FENDER WERE WELDED AND THE FENDER WAS
                                                                     REMOUNTED EPR FB-169
27/09/77 2 414.7 009.0  U O D A C Y Y 2403  00.0  00.5  00.5 1  00.0 RE-THREAD BUCKET DUMP CONTROL ROD +     208
                                                                     INSTALL - THE ROD HAD BROKEN OFF NEAR
                                                                     THREADED END. EPR FB-208
29/09/77 1 436.1 010.0  U F O A C N N 1601  00.0  04.0  04.0 1  00.3 REMOVED CURBSIDE FRONT FENDER. MODIFIED 169(S-1)
                                                                     WITH ANGLE IRON TO GIVE IT STRUCTURAL
                                                                     SUPPORT, AND REMOUNTED USING BOLTS AND
                                                                     NUTS RATHER THAN SPOT WELDING. EPR
                                                                     FB-169(S-1)
30/09/77 1 450.3 010.1  U C C A C Y Y 7437  00.0  01.0  02.0 2  00.0 REMOVED BUCKET TEETH. TEETH EXCESSIVELY 351(132-1)
CRITICALITY FACTOR= 1.00                                             WORN, EPR FB-351(132-1)
30/09/77 1 450.3  10.2  S C C A M Y N 0000         0.2   0.4 2       PERFORMED 50 HOUR SERVICE. EPR FB-1047  1047
05/10/77 1 466.5 010.3  U C C A M Y N 7437  00.0  01.2  02.4 2  00.0 INSTALL NEW TEETH ON BUCKET EPR         351(S-1)
                                                                     FB-351(S-1)
PARTS 25278            GP=000037437 NO=10 LIFE=14F.0 TOOTH ASSY
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,966
 D         S OHR   A     T S C E T Q A C   G  CO     CH     MH     M OT                                              E
 A         H DON   C     A / C C M A M S   R  OL     LO     AO     E IT                                              P
 T         F OUD   T     S U H H '   T F   P  NY     OU     NU     N AM                                              R
 E         T HRS   N     K     R S            T      CR     R        GE                                              S
                                                     KS                      DESCRIPTION

05/10/77 2 467.4 011.0  U O D A M Y Y 1202          0.8    0.8 1        ADJUST SERVICE BRAKES. EPR FB-1066        1066

11/10/77 1 500.0  11.1  S O D A M Y N 0000          2.2    4.4 2        COMPLETED 500 HOUR MAINTENANCE. EPR       1046
                                                                       FB-1046

PARTS 569022-03           GF=000030900 NO=01 LIFE=251.8 VENT ASSY, BREATHER, MIDMOUNT
      569022-03              000031000    01       251.8 VENT ASSY, BREATHER, AXLE
      AC43887                000031204    01       251.8 FILTER ELEMENT, FL, POWER CLUSTER

18/10/77 1 560.1 012.0  U O D A C Y Y 1001  00.0  01.3  02.6 2  00.0 REMOVE CURBSIDE FENDER, REWELD FENDER    359(224-1)
                                                                       BRACE TO FRAME, REINSTALL FENDER EPR
                                                                       FB-359(224-1)
CRITICALITY FACTOR= 1.00

18/10/77 1 560.1 012.0A S C C A M Y N 0000  00.0  00.7  00.7 1  00.0 PERFORMED 50 HR. MAINTENANCE PER LUBE     360
                                                                       ORDER L05-3040-203-12. ADDED 5.5 ML. OF
                                                                       OE/HD TO MIDMOUNT BEARING. EPR FB-360

19/10/77 2 572.6 013.0  U C C A M Y Y 7437  00.0  01.2  02.4 2  00.0 CLEANED HARD MUD FROM AROUND TEETH +     363
                                                                       SHANKS TIGHTENED BOLTS. EPR F3-363

20/10/77 1 578.1 014.0  S C C A M Y N 7437  00.0  01.0  02.0 2  00.0 INVERTED BUCKET TOOTH TIPS IN ORDER TO   365
                                                                       INCREASE USEFUL LIFE. EPR FB-365

21/10/77 1 590.3 015.0  S C C A M Y N 7437  00.0  01.4  02.4 2  00.0 REMOVE AND REPLACE BUCKET TOOTH TIPS.     366(132-2)
                                                                       EPR FB-366(132-2)

PARTS 204157              GP=000037437 NO=10 LIFE=123.8 TIP,BUCKET TOOTH
      7394                   000037437    10       123.8 PIN, SPRING

26/10/77 2 623.4  15.1  S C C A M Y N 0000          0.2    0.4 2        50 HOUR SERVICE. EPR FB-1050              1050

27/10/77 2 627.7 016.0  U C C A M Y N 2407  00.0  00.1  00.1 1  00.0 INSTALL GREASE FITTING TO REPLACE A       370
                                                                       MISSING ONE ON THE RIGHT TILT ARM ASSY
                                                                       EPR F3-370

PARTS MS-15001-1          GP=000032407 NO=01 LIFE=UNK   GREASE FITTING

05/11/77 1 656.1 017.0  S C C A M Y N 0000  00.0  01.4  02.8 2        PERFORMED 50 HR MAINTENANCE PER LUBE      374
                                                                       ORDER L05- -203-12. EPR FB-374
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03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,966
 D         S OHR    A    T S E E T Q A C    G  CD     CH    MH    M DT                                           E
 A         H DON    C    A / C C M A M S    R  OL     LO    AO    E IT                                           P
 T         F DUD    T    S U H H ' T F      P  NY     OU    NU    N AM                                           R
 E         T HRS    N    K     R S             T      CR    R       GE                                           S
                                                      KS                      DESCRIPTION

07/11/77 1 666.3 017.1  U C C A M Y N 2407  00.0  00.2  00.2 1  00.0 REPLACED LUBRICATION FITTING ON        376(S-1)
                                                                     CURBSIDE CYLINDER ASSEMBLY EPR
                                                                     FB-376(S-1)

PARTS MS150001-1           GP=000032407 NO=01 LIFE=UNK   FITTING, LUBRICATION

08/11/77 2 685.6 018.0  U O D A M Y Y 2407  00.0  01.0  04.0 4  00.0 REMOVE BOOM PIN- GREASE + REINSTALL PIN  377
                                                                     WAS DRY FROM LACK OF GREASE EPR FB-377

10/11/77 1 706.4 019.0  S C C A M Y N 0000  00.0  00.6  01.2 2  00.0 50 HOUR MAINTENANCE ADDED 30 ML OF       380
                                                                     LUBRICANT TO MIDMOUNT W. S. ADDED 3 OZ
                                                                     BRAKE FLUID TO MASTER CYLINDER
                                                                     RESERVOIR EPR FB-380

11/11/77 1 719.9 020.0  U O D A M Y Y 2403  00.0  00.3  00.3 1  00.0 BUCKET HOIST CONTROL ROD FAILED AT       392
                                                                     THREADED END. CONTROL ROD WAS
                                                                     RETHREADED AND REINSTALLED. EPR FB-382

11/11/77 1 723.3 021.0  S C C A M Y N 7437  00.0  01.5  03.0 2  00.0 REMOVED BUCKET TEETH FROM SHANKS,        383(365-1).
                                                                     TURNED TEETH OVER AND REINSTALLED ON
                                                                     SHANK AND LOADER. EPR FB-383(365-1).

16/11/77 1 758.2 022.0  S O D A M Y N 0000  00.0  00.7  00.7 1  00.0 250 HR MAINTENANCE MID MOUNT BEARING     391
                                                                     LUBRICANT OK EPR FB-391

PARTS 563022-03            GP=000030900 NO=01 LIFE=258.2 VENT ASSY, BREATHER, MIDMOUNT
      569022-03               000031000    01      258.2 VENT ASSY, BREATHER, AXLE
       AC43887                000031204    01      258.2 FILTER ELEMENT, FL, POWER CLUSTER

16/11/77 1 758.2 022.0A S C C A M Y N 7437  00.0  02.0  02.0 1  00.0 REPLACED BUCKET TOOTH TIPS. EPR          610(132-3).
                                                                     FB-610(132-3).

PARTS 204157               GP=000037437 NO=10 LIFE=167.3 TIP, BUCKET TOOTH
        7394                  000037437    10      167.3 PIN, SPRING

22/11/77 1 819.6 022.1  S C C A M Y N 0000  00.0  00.6  01.9 3  00.0 PERFORMED 50 HR MAINTENANCE PER LUBE     670
                                                                     ORDER LO5--203-12. DURING PERFORMANCE
                                                                     OF THE 50 HR MAINTENANCE 112 ML OF
                                                                     HEAVY DUTY OIL WAS ADDED TO MID-MOUNT
                                                                     BEARING.E MOVED DIRT AND MUD FROM
                                                                     DOUPLER SECTION. GREASED FITTING
                                                                     ACCORDING TO THE LUBE ORDER. CHECKED
                                                                     MASTER CYLINDER AND FOUND IT HAD THE
                                                                     REQUIRED AMOUNT OF BRAKE FLUID. EPR
                                                                     FB-670
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,966
 D          S OHR   A     T S L E T Q A C    G  CD     CH      MH      M DT                                          E
 A          H DON   G     A / C C M A M S    R  OL     LO      AO      E IT                                          P
 T          F OUD   T     S U H H '   T F    P  NY     OU      NU      N AM                                          R
 E          T MRS   N     K     R S             T      CR      R         GE                                          S
                                                       KS                         DESCRIPTION
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 12/12/77 2 888.6 023.0   U O O A C Y Y 7437   00.0   03.0   00.0 2   00.0 RE-WELD BROKEN WELDS ON BUCKET EPR       678
                                                                          FB-678
CRITICALITY FACTOR= 1.00
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 13/12/77 2 888.6 024.0   U C C A M Y N 7437   00.0   01.0   01.0 1   00.0 REMOVE WORN TOOTH TIPS + INSTALL NEW     679(132-4).
                                                                          TIPS EPR FB-679(132-4).

 PARTS 204157               GP=000037437 NO=10 LIFE=130.2 TIP, BUCKET TOOTH
       7394                    000037437     10       130.2 PIN, SPRING
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 16/12/77 1 901.3 025.0   S C C A M Y N 0000   00.0   01.1   02.2 1   00.0 50 HOUR MAINTENANCE DOLLY WHEEL          454
                                                                          ACTUATION CABLE FAILED UNABLE TO LOWER
                                                                          DOLLY WHEEL, UNABLE TO UNCOUPLE AND
                                                                          CHECK MID MOUNT BEARING REPLACEMENT
                                                                          PART NOT AVAILABLE EPR FB-454
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 22/12/77 1 917.7 027.0   S C C A M N N 2406   00.0   00.2   00.2 1   00.1 LOCK NUT ON HOSE CONNECTOR LOOSE,        489
                                                                          LEAKING. TIGHTENED LOCK NUT. EPR FB-489

 27/12/77 1 921.6 028.0   U F F A M Y Y 7437   00.0   02.0   02.0 1   00.0 REMOVED OLD WELD AND REWELED BUCKET      490
                                                                          CLAM ASSEMBLY. EPR FB-490
CRITICALITY FACTOR= 1.00
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 10/01/78 1 954.9 029.0   S C C A M Y N 0000   00.0   00.5   00.9 3   00.0 PERFORMED 50 HOUR MAINTENANCE ADDED 2    530
                                                                          OZ. BRAKE FLUID TO MASTER CYLINDER EPR
                                                                          FB-530

 23/01/78 1 988.8 030.0   U C C A M Y N 7437   00.0   00.2   00.2 1   00.0 INSTALLED A NEW SHANK TOOTH AND BUCKET   825.
                                                                          TOOTH TIP TO REPLACE THE LOST ONES EPR
                                                                          FB-825.

 PARTS 25278                GP=000037437 NO=01 LIFE=522.3 TOOTH ASSY, BUCKET

 23/01/78 1 990.6 031.0   U C C A M Y N 7412   00.0   00.2   00.2 1   00.0 REPLACED GREASE FITTING ON BOTTOM,       587
                                                                          RIGHT OF LIFT ARM EPR FB-587

 PARTS 10H-25               GP=000037412 NO=01 LIFE=       FITTING, LUBRICATION

 24/01/78 2 01000 032.0   U O O A M Y Y 1208   00.0   00.2   00.2 1   00.0 REPLACED BROKEN ADAPTOR ON AUTOMATIC     612
                                                                          DRAIN VALUE EPR FB-612

 PARTS 246267               GP=000031208 NO=01 LIFE=01000 ADAPTOR
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03/05/79
MAINTENANCE TASK LOG    TEST ,FAMECE1 TEST ITEM ,966
D          S OHR    A     T S E E T Q A C   G  CD     CH     MH     M DT                                        E
A          H DON    C     A / C C M A M S   R  OL     LO     AO     E IT                                        P
T          F OUO    T     S U H H *   T F   P  NY     OU     NU     N AM                                        R
E          T HRS    N     K     R S            T      CR      R       GE                                        S
                                                      KS                         DESCRIPTION

25/01/78 1 01000  32.1  S O D A    N N                2.9    4.9 2        PERFORMED 1000 HOUR MAINTENANCE PER LUB  611
                                                                          ORDER LO5- -203-129. EPR FB-611

PARTS 569022-03             GP=000030900 NO=01 LIFE=241.8 VENT ASSY, BREATHER, MIDMOUNT
      569022-03                000031000    01       241.8 VENT ASSY, BREATHER, AXLE
      4C43887                  000031204    01       241.8 FILTER ELEMENT, FL, POWER CLUSTER

28/01/78 1 01024  33.0  U C C A M Y N 7412  00.0  00.1  00.1 1  00.0 REPLACED CAPSCREW AND NUT IN TOOTH        624
                                                                     SHANK EPR FB-624

PARTS 15714                 GP=000037412 NO=01 LIFE=557.9 SCREW,CAP HEX HEAD
      4226                     000037412    01       557.9 NUT, HEX

30/01/78 1 01038 034.0  U O D A M Y N 7437  00.0  00.3  00.3 1  00.0 REPLACED BUCKET TOOTH ASSEMBLY EPR         630
                                                                     FB-630

PARTS 25278                 GP=000037437 NO=01 LIFE=572.4 BUCKET TOOTH ASSEMBLY BUCKET

02/02/78 1 01045 035.0  U O D A M Y Y 7437  00.0  02.0  04.0 2  00.0 REPLACED CLAM ASSEMBLY ON THE BUCKET      633(S-1)
                                                                     EPR FB-633(S-1)
CRITICALITY FACTOR= 1.00

PARTS 1846                  GP=000037437 NO=01 LIFE=01045 CLAM ASSY BLADE ASSY

02/02/78 2 01048 036.0  U O O A M N N 2406  00.0  01.4  01.4 1  00.0 WELDED HYDRAULIC LINE TO LIFT CYLINDER    701
                                                                     EPR FB-701

03/02/78 1 01048 037.0  S C C A M Y Y 0000  00.0  01.0  01.0 1  00.0 ADDED 4 OZ BRAKE FLUID TO MASTER          640
                                                                     CYLINDER 50 HOUR SERVICE EPR FB-640

03/02/78 1 01048 037.0A U O D A M Y Y 7436  00.0  01.0  02.0 2  00.2 REMOVED LOWER CURBSIDE BUCKET PIVOT PIN   706
                                                                     AND CLEANED PIN. REINSTALLED PIVOT PIN.
                                                                     (PART NO. 2508049) REPLACED LOWER
                                                                     CURBSIDE PIVOT PIN LUBRICATION FITTING.
                                                                     EPR FB-706

PARTS 10H-25                GP=000037436 NO=01 LIFE=0UNK  FITTING, LUBRICATION BOOM ASSEMBLY

04/02/78 2 01100 038.0  S C C A M Y N       00.0  00.2  00.6 3  00.0 PERFORMED 50 HOUR MAINTENANCE EPR         841
                                                                     FB-841
```

```
03/05/79
MAINTENANCE TASK LOG   TEST ,FAMECE1 TEST ITEM ,966
D          S OHR   A     T S E E T Q A C   G  CO     CH     MH     M DT                                   E
A          H DON   C     A / C C M A M S   R  OL     LO     AO     E IT                                   P
T          F OUD   T     S U H H '   T F   P  NY     OU     NU     N AM                                   R
E          T MRS   N     K     R S             T     CR      R       GE                                   S
                                                     KS                        DESCRIPTION

23/03/78     1104 039.0  U O O A    Y N 0609         1.2    2.4 2         REPLACED TWO WIRING HARNESS. EPR FB-954   954

PARTS 2549818            GP=000030609 NO=02 LIFE=        WIRING HARNESS.

23/03/78     1104 039.0A U F O I    N N 0900         0.1    0.1 1         REPLACED PLUG ON MIDMOUNT SPIDER ASSY.    955
                                                                        EPR FB-955

PARTS 16F-01             GP=000030609 NO=01 LIFE=        PLUG,PIPE

23/03/78     1104 039.0B U C C A    N N 0900         0.1    0.1 1         LUBRICATED MIDMOUNT BEARING. (POWER       955
                                                                        SECTION AND WORK SECTION UNCOUPLED.)
                                                                        EPR FB-955

23/03/78     1104 039.0C U C C A    Y N 0609         0.1    0.1 1         REPLACED LEFT TURN SIGNAL LENS EPR        955
                                                                        FB-955

PARTS 11639546           GP=    030609 NO=01 LIFE=        LENS

23/03/78     1104 039.0D U C C A    Y N 0609         0.2    0.2 1         REPLACED LEFT TURN SIGNAL BULB. EPR       955
                                                                        FB-955

PARTS MS15570-1251       GP=    030609 NO=01 LIFE=        LAMP, INCAND.
```

APPENDIX E

TEST SCHEDULE

TEST ITEM AND REF NO. PS = POWER SECTION WS = WORK SECTION		TEST PERIOD AUGUST 1977 - MARCH 1978							
		AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
Dumper	PS T935 WS T936	2							
Dumper	PS T935 WS T942					15			
Grader	PS T939 WS T940								15
Loader	PS T937 WS T966	26							17
Distrib	PS T941 WS T938		10						17
Dozer	PS T943 WS T944		21						27
Compactor (TF)	PS T951 WS T952				14				15
Scraper	PS T947 WS T948					3			27
Compactor (SD)	PS T951 WS T952					12			
Dumper	PS T959 WS T960					12			27
Distrib	PS T957 WS T958						9		27
Grader	PS T949 WS T950								27

APPENDIX F

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APPENDIX G

ABBREVIATIONS

Aa	Achieved Availability
AAR	Association of American Railroads
ACE	Army Aviation Communications Electronics Board
AMSAA	Army Materiel Systems Analysis Agency
APG	Aberdeen Proving Ground
ASTM	American Society for Testing Materials
ATE	Automatic Test Equipment
BOC	Best Operational Capability
CEC	Clark Equipment Company
DA	Department of the Army
DARCOM	Materiel Development and Readiness Command
DEP	Draft Equipment Publication
DP	Development Plan
DS	Direct Support
DSMA	Duration of Scheduled Maintenance Actions
DT	Development Test
DTP	Detail Test Plan
EDT	Engineer Design Test
EPR	Equipment Performance Report
FAMECE	Family of Military Engineer Construction Equipment
FFR	FAMECE Failure Report
FSD	Full-Scale Development
FSMA	Frequency of Scheduled Maintenance Actions
GS	General Support
GVW	Gross Vehicle Weight
HFE	Human Factors Engineering
IER	Independent Evaluation Report
MAC	Maintenance Allocation Chart
MAV	Minimum Acceptable Value
MCF	Mission Criticality Factors

$M_{max_{ct}}$	Maximum Time to Repair
MN	Materiel Need
MOS	Military Occupational Specialty
MR	Maintenance Ratio
MTBF	Mean Time Between Failure
MTL	Maintenance Task Log
MTSP	Maintenance Test Support Package
MTTR	Mean Time to Repair
NARADCOM	Natick Research and Development Command
NET	New Equipment Training
NSN	National Stock Number
OEM	On-Equipment Material
OT	Operational Test
PM	Project Manager
PMCS	Preventive Maintenance Checks and Services
PQT-C	Prototype Qualification Testing-Contractor
PQT-G	Prototype Qualification Testing-Government
PS	Power Section
QMR	Qualified Materiel Requirement
RAM-D	Reliability Availability Maintainability Data
RDAT	Research and Development Acceptance Test
RDT&E	Research, Development, Test and Evaluation
ROPS	Rollover Protective Structure
R/M	Revolutions per Minute
RPSTL	Repair Parts and Special Tools List
SAE	Society of Automotive Engineers
S.D.	Smooth Drum
SF	System Failure
SIDTC	
ST	Standby Time
TCM	Total Active Corrective Maintenance (Unscheduled)
TDP	Test Design Plan
TEA	Transportation Engineering Agency

TECOM	Test and Evaluation Command
TIWG	Test Integration Working Group
TMDE	Test, Measurement, and Diagnostic Equipment
TOP	Test Operations Procedure
TOP/MTP	Test Operations Procedure/Material Test Procedure
TPM	Total Active Preventive Maintenance (Scheduled)
TRADOC	Training and Doctrine Command
UAM	Unscheduled Active Maintenance
UET	Universal Engineer Tractor
USAARENBD	U.S. Army Armor Engineer Board
USACEBD	U.S. Army Communications Electronics Command
USAHEL	U.S. Army Human Engineering Laboratory
WS	Work Section

APPENDIX H

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